Entering FEANTM
Research, Development
Camping, Horse Trails
population virtual
Welcome

Airport - FNSS

Airport - RBF
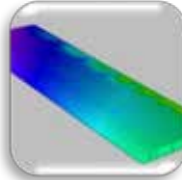
Dinky News

J.O.H Sports Stadium

Marco - RBF
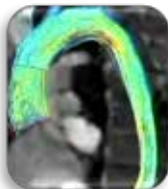
Curt - Autodesk

Metin - OZEN Engineering

Madhukar - CADFEM

Marta - OASYS

Matt Smolka from Lotus

Bart – LS-DYNA

Margaret - CADFEM

CADFEM D-A-CH

Adam - MIST

Brianna - LLNL

Carla – LS-DYNA

Ansys LS-DYNA USER CONFERENCE

Alan - CERT

Trina – Applus+DatapointLabs

Ansys TRANSPORTATION SUMMIT 2024

Kensi's Garden – SolidWorks

Library - Sakarya Univ
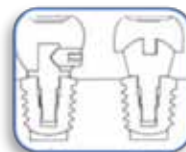
Jenson - DFETECH

Now Entering the Town Hall Plaza - drive slowly – galloping prohibited

Legal - the shortened version (town attorney will be upset BUT it was too long to read)

Editors: (alpha order) Anthony, Art, Churchill, Marnie, Marsha, Sabyl,

Jr. Editors: Rheannon and Kensington (yes, she likes pink)

Town Pretend to be Editors:

The Old Rancher	**No one in town knows his name. You yell "Hey, Old Rancher."**
The Old Pilot	**No one in town knows his name. You yell "Hey, Old Pilot."**
The Old Racer	**No one in town knows his name. You yell "Hey, Old Racer."**

They are all brothers - strange family

Contact us at: feaanswer@aol.com   Attribution: Map town graphics are courtesy of vecteezy

We will never forget

R & D - Camping - Town Map

Horse Trail ⟶   Yield right of way to horses

R & D Technology
Business Park Plaza

RV CAMPING
Park in any vacant camping site

Town Hall & Library

TOWN HALL   Library

CADFEM

DFETECH

OZEN

d3VIEW

Oasys

rescale

ENGINSOFT

Ansys

AUTODESK

Applus⊕ DatapointLabs

Fire & Police Depts.

Lawrence Livermore National Laboratory

Coffee Shop
News
Marsha & Marnie

Petting Zoo

LS-DYNA Sports

Research Hospital

LivGEMINI

rbf

MEDITATE

Old Rancher

Rheannon's Aerospace Hangar

Kensington's Garden

Race Track

Elect/Water. & Sewage Treatment Plant Facilities

Table of contents

- · **The individuals mentioned are the persons we wish to thank.**
- · **The above doesn't imply that they are the author, with a particular company, or department**

Table of contents

I will post a chapter monthly (who out there just yelled, "OH NO, Marsha please don't."
If you can't wait, write to me and I will send you the web page URL that has all chapters.
They are pdfs on the website, but the page is not linked to the menu.
Why isn't it in on the menu? Well, because it doesn't exist other my & Chat's imagination.
Can AI have imagination?   *Marsha* (feaanswer@aol.com)

Welcome to our Town Hall Meeting & Announcements

Town Hall Meeting

Park Cars behind building
Park Tractors behind cars
Tie horses to hitching rails

Free coffee & cookies of all kinds of chocolate
The town consists of individuals finding solutions, and caring about animals and children.
Town Gossip is at the local coffee shop.
Pets are welcome. Horses, pet goats stay outside.
Town Motto: Creation is born from trying. If it doesn't work, then you learn & try again. You will succeed. Ideas, simulations, medical cures, & creativity would not come to life without failure and the passion to try again.

First – We called in town residents to use their bulldozers, tractors, utility vehicles, and our volunteers leveled a pasture in back of a barn…. **We voted and the name of the new Sport Stadium is J.O.H LS-DYNA Sports Stadium**. If you have an open access paper on sports using LS-DYNA please send the URL for the page to feaanswer@aol.com subject J.O.H Sports Stadium. (The town thanks A.A.K for the inspiration)

Second - **Alan Nichols from the neighboring town, Livermore, CA now has his own section in the Fire Department/Police area** – each month Alan will bring an important video or information to our attention on emergency preparedness starting with a YouTube Video: Fire Extinguisher Training Video - Types and Uses. Alan also trains the FEANTM CERT - Critter Emergency Response Team.

AND HAPPY HALLOWEEN from our town FEANTM

Article:
Simulating Particle Breakage in DEM - The Importance of Accurate Particle Breakage Simulation – by German Ibarra

Article:
Kopter Group AG - RF interference simulation for antenna positioning Avoid interference between different transmitting and receiving units with high-frequency electromagnetic simulation

Article:
Our YouTube Channel: Webinar, Ansys Mechanical (Simulation of Pressure Vessels) - Video, Ansys Fluent: FSI - Webinar, Ansys Electronics (Conical Spiral Antenna Simulation).

Research Hospital:
A Post-Processing Method Based on Radial Basis Functions for the Fast Retrieval of the Strain Field in Digital Image Correlation Methods growth.

If you ride a motorcycle, you know how important the suspension system stability is. Here is an excerpt - Numerical modeling - **The numerical solution of the 3D structural analysis was performed in ANSYS Mechanical 21.0 software**. To simplify the mesh generation, the tetrahedral meshing method was adopted.

Science Direct Publication–Web - [Finite element analysis of motorcycle suspension system stability using different materials](#)

Towhidul Islam, Md Wasi Uddin, Rokib Uddin
Dept. of Mechanical Engineering, Military Institute of Science and Technology, Dhaka, Bangladesh

Abstract - Due to the unsuitability of conventional materials in Motorcycle Suspension Systems (McSS) for high-stress loads, their poor vibration dampening, uneven distribution of kinetic energy through the spring, and higher cost, there is a need to explore alternative materials for suspension systems. **This study focuses on assessing the structural stability of the McSS using different materials.**

For this purpose, a three-dimensional standard helical spring suspension model is considered, incorporating four different coil spring materials: high carbon steel, titanium, beryllium copper, and nickel-cobalt-chromium alloy. The spring coil suspension body is assumed to have homogeneous and linear material properties.

Boundary conditions such as single-person and two-person loads are applied to the suspension. Following this, Finite Element Analysis (FEA) is employed for all material cases to evaluate directional deformation in the y-axis and equivalent stress, and a comparison is made to analyze structural stability. The results indicate that the nickel-cobalt-chromium alloy coil spring exhibits superior performance in terms of deformation and equivalent stress compared to titanium and beryllium copper alloy. Under both load conditions, the maximum deformation of the nickel-cobalt-chromium alloy is 106% and 57% less than titanium and beryllium copper alloy, respectively. However, the deformation and von Mises stress of the nickel-cobalt-chromium alloy are nearly similar to that of steel. Therefore, nickel-cobalt-chromium alloy can serve as an alternative to titanium and beryllium copper alloy when suspension weight is not a concern. However, high carbon steel is the better choice among the four materials due to its comparatively lower weight, optimal deformation, and higher von Mises stress.

Introduction - The motorcycle suspension system, a crucial element in motorcycles, serves multiple functions such as supporting the motorcycle's weight, reducing vibration levels caused by uneven terrain, and ensuring wheel contact with the ground. An effective Motorcycle Suspension System (McSS) not only absorbs ground disturbances and shocks but also prioritizes user comfort. The McSS plays a significant role in supporting the motorcycle's structure and dampening vibrations caused by road irregularities through the use of coil springs. Coil springs, a vital component of the McSS, greatly influence the bike's comfort, road handling, and stability. Coil springs are also commonly employed in contemporary lightweight automobiles to mitigate irregular vibrations.
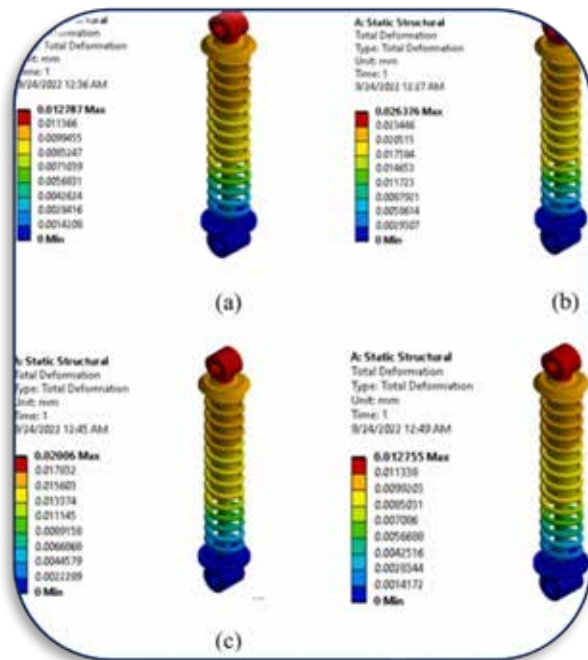
Gina	"Mr. Robbins, do you like tea?"
I replied	"I do like tea. What kind are you sipping?"
Gina	"Gramma tea. She makes it in a kettle."
I replied	"In May I showed a tea kettle simulation to Anna. I think you will like to see it."

YouTube - The simulation shows the multiphysics capabilities of LS-DYNA.

The three solvers used were the CFD solver, the solid thermal solver and the Electromagnetism solver.

The CFD solver is coupled to the Solid Thermal Solver and the Electromagnetism Solver to simulate the heating of water inside an electric kettle which is plugged in to standard 110V switch.
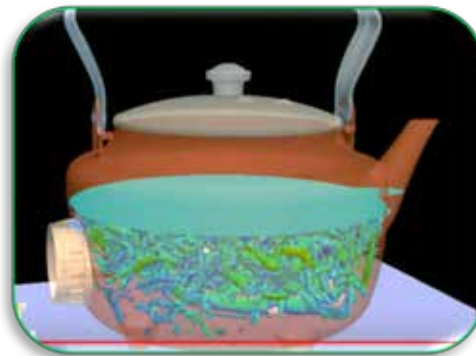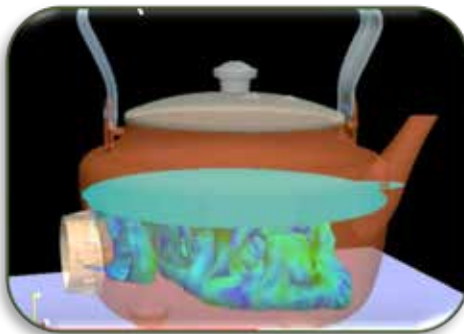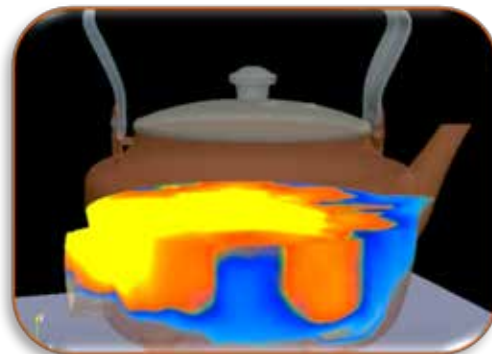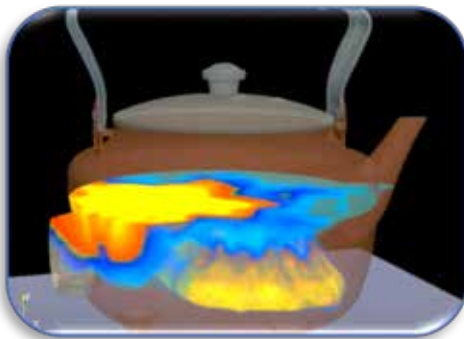
Livermore, CA - LLNL - Lawrence Livermore National Laboratory

Excerpt - In the rapidly evolving world of 3D printing, the pursuit of faster, more efficient and versatile production methods is never-ending. Traditional 3D printing techniques, while groundbreaking, are often time-consuming and limited in the kinds of materials they can use as feedstock.

LLNL looks to revolutionize 3D printing through microwave technology - Jeremy Thomas

Lawrence Livermore National Laboratory researchers, including (from left) Saptarshi Mukherjee, Johanna Vandenbrande and Ethan Rosenberg, have introduced an innovative new approach to 3D printing using microwave energy to cure materials, opening the door to a broader range of materials than ever before. (Photo: Blaise Douros/LLNL)

Through a new process a Lawrence Livermore National Laboratory (LLNL) team is calling Microwave Volumetric Additive Manufacturing (MVAM), researchers have introduced an innovative new approach to 3D printing using microwave energy to cure materials, opening the door to a broader range of materials than ever before.

In a recent paper published by Additive Manufacturing Letters, LLNL researchers describe the potential of microwave energy to penetrate a wider range of materials compared to light-based volumetric additive manufacturing (VAM). While VAM techniques like Computed Axial Lithography allow for rapid printing of complex 3D shapes in a single operation and eliminate the need for support structures, VAM relies on specific materials, primarily transparent and low-absorbing resins, which restricts the use of opaque or composite materials. Compared to projected light, microwaves can reach deeper into materials, making them an ideal candidate for curing a variety of resins, including resins that are opaque or loaded with additives, researchers said. This capability could significantly enhance the versatility of 3D printing, allowing for the creation of more complex, functional and larger parts, according to LLNL research scientist Saptarshi Mukherjee, who co-led the paper with Lab materials chemist Johanna Schwartz.
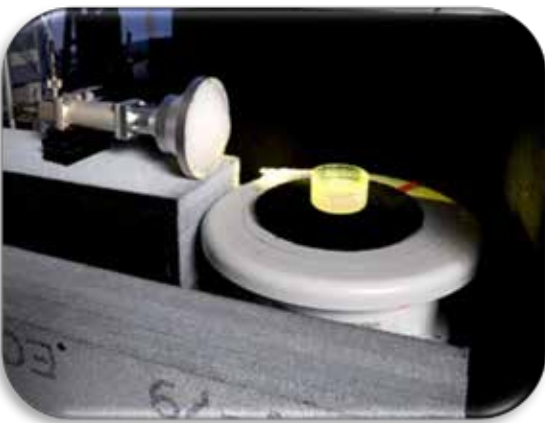
"I think this is going to revolutionize the way people look at additive manufacturing," said Mukherjee, who specializes in applied electromagnetics. "If we think about a lot of applications — aerospace, automotive, nuclear industry — their geometries are simple, but they are large and they need rapid prototyping. One major impact [of MVAM] is if we can maintain a feedstock of materials surrounded with a microwave antenna array, we can now think about creating simple large geometries, as well as complicated large geometries, at scale using microwaves." Co-author Maxim Shusteff, co-inventor of the original visible light-based CAL approach, said the ability to quickly produce parts with large geometries could be a game changer for additive manufacturing.

"Microwave volumetric AM opens up a new frontier in 3D printing by enabling the use of opaque and filled materials, which were previously challenging to work with," Shusteff said, "This can be a path toward large-format parts with enhanced material properties."

A breakthrough in curing technology - To explore the potential of microwave VAM, the research team at LLNL developed a multi-physics computational model of the microwave beams, designed to optimize power delivery and curing time and ensure better thermal control during the printing process. By simulating how microwaves interact with different materials, the team can predict how effectively they can cure various resins. The researchers validated their model using a proof-of-concept experimental system and demonstrated the ability to cure a wide variety of materials, including both optically translucent and opaque epoxy resins. The results were impressive: while existing microwave hardware operating at 40 watts could cure resins in about 2.5 minutes, the model suggested that curing times could be reduced to as little as six seconds at one-kilowatt power levels — about the same amount of energy as a standard microwave oven.

This capability could potentially speed up the production process and allow for the creation of larger parts, researchers said. The team found that their approach can print features ranging from a few millimeters to 20 millimeters, with the potential to scale up to meter-sized structures in the future. The multi-physics model allows researchers to visualize how microwave energy propagates through materials and how it affects the curing process. By understanding properties of different materials, the team was able to fine-tune the microwave energy to achieve optimal results, researchers reported.

Co-principal investigator Schwartz, the team's chemistry lead, said that while traditional (optical) VAM is limited by the need for transparent, low-absorbing photoresins, with microwave VAM, "a whole new world of printing materials becomes possible." "With have a unique opportunity to expand the definition of what is 'printable,' accessing chemistries previously not possible in light-based systems," Schwartz said. "This is a whole new printing space, and so our ongoing progress is just extremely exciting."

Mukherjee added that researchers could apply the same concepts used in optical VAM, but do so with "an array of antennas and beamforming algorithms" instead of a standard light projector.

"We are developing the full antenna array system with beamforming algorithms and we're specifically looking at ceramic materials because of their inaccessibility by conventional VAM and also because of their promise in various high-temperature, high-pressure kinds of environments," Mukherjee said.

Researchers said the implications of the work could extend far beyond the Laboratory. The ability to cure a wider range of materials quickly and efficiently could be transformative in industries such as aerospace, automotive and healthcare. For instance, manufacturers could create complex components with integrated functionalities, such as sensors or conductive pathways, all in a single printing process.

In addition, the potential for using opaque and composite materials means that products can be designed with enhanced properties, such as improved strength, thermal resistance or electrical conductivity. This versatility could lead to the development of entirely new products and applications that were previously unimaginable, according to the researchers. As the team continues to refine their MVAM system, they envision a future where multi-antenna arrays can be used to further enhance the curing process and make manufacturing more efficient and capable of producing a wider array of materials at unprecedented speeds. pushing the boundaries of what's possible in AM. But first, researchers will need to figure out how to make the process cheaper, and potentially spin the technology out to industry. Future work also aims to incorporate particle-scale effects into the model, further enhancing its predictive capabilities.

"High-power microwave devices are extremely expensive — a one-kilowatt pulsed microwave amplifier system could cost between $50,000 and $100,000," Mukherjee said. "We are looking at how we can custom design or custom build some of these circuits or hardware by ourselves so that we can reduce a lot of cost and show that the overall concept works before big projects or outside external sponsors are willing to invest in this technology." …This work is a result of a Lab-wide Laboratory Directed Research & Development project co-led by Mukherjee and Schwartz titled "Microwave Volumetric Additive Manufacturing for Ceramics." Other team members are Ethan Rosenberg, Johanna Vandenbrande, Emeraldo Baluyot, Tammy Chang, Joe Tringe, James Kelly and Materials Engineering Division leader Chris Spadaccini.

THIS IS THE MONTH! the Int'l LS-DYNA Users conference starts October 22nd here in my hometown Detroit, MI."

What will I be attending at the LS-DYNA portion? I've listed below a few of the presentations I don't want to miss.

Oct. 22 - 23, 2024 - Metro Detroit

ANSYS - Website All LS-DYNA Users plan to meet in, Michigan.

AGENDA

- Use of LS-DYNA for Estimating **Earthquake**-induced Ground Settlements
- LS-DYNA User-Defined Internal **Ballistic** Modeling
- Cost-Effective **Body Armor** Design with Advanced Optimization using LS-OPT
- Pyheart-lib: A Python Library For LS-DYNA Multi-Physics **Heart Simulations**
- Design Evaluation of an Ortho-Chair for the Prevention and Relief of **Lower Back Pain**
- A New Eikonal Solver for **Cardiac Electrophysiology** in LS-DYNA
- Optimization of **Prosthetic Heart Valves**: Enhancing Hemodynamics through Advanced Morphing...
- Simulation workflow for **Transcatheter Aortic Valve Replacements**…
- **Drone impact** on residential roof structure to verify occupant safety
- **HANS** meets the GNS software Working with HBMs in Generator4 and Animator4
- **Hans** Enhancements
- Topology Optimization for Giga-Casting Design in Automotive Bodies Using **LS-TASC & LS-DYNA**
- Simulating Safe Landing: A Deep Dive into **Parachute Inflation and Float** with LS-DYNA

Saint Johns' Resort - 44045 Five Mile Rd
Plymouth, MI 48170

A 200-acre iconic landmark
Surrounded by natural beauty.

MDPI – Excerpt - ANSYS - This paper optimizes the design of the fresh-peanut-picking crawler combine harvester. It verifies the operational safety of the peanut-picking device under hilly region conditions using ANSYS Workbench finite element analysis software...**The ANSYS Workbench finite element analysis software is used to perform static analysis and modal analysis on the peanut-picking roller**, and the total deformation, stress, strain, and modal data of the peanut-picking roller were obtained.
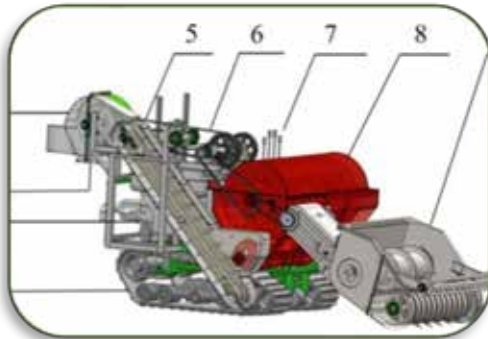
Web – MDPI - [The Design and Optimization of a Peanut-Picking System for a Fresh-Peanut-Picking Crawler Combine Harvester](#)

J. Ling, H. Shen, M. Gu, Z. Hu, S. Zhao, F. Wu, H. Xu, F.Gu
· Nanjing Inst. of Ag. Mecha. Ministry of Ag. & Rural Affairs, CN
· Graduate School of Chinese Academy of Ag. Sci., CN
· Henan Zhonglian Harvest Machinery Co., Ltd., CN
· Key Lab. of Modern Ag. Equip., Ministry of Ag. & Rural Affairs, CN
· Collaborative Innovation Ctr. for Shandong's Main Crop Production Equipment and Mechanization, CN

Figure 1. Fresh-peanut-picking crawler combine harvester: 1: chassis walking system; 2: dynamical system; 3: peanut collection device; 4: cleaning device; 5: inclined scraper conveyor; 6: transmission system; 7: control console; 8: peanut-picking device; 9: picking platform.

Abstract - In view of the problem that peanut harvesting in hilly areas mainly involves fresh food, and that the peanut-picking purity rate is low and there is high breakage in the peanut-harvesting process, key components such as the picking system of a fresh-peanut-picking crawler combine harvester, the picking tooth, and the concave screen were designed, and **ANSYS Workbench 2020 software was used to check the reliability of the picking roller under working conditions in hilly areas.** In the process of equipment operation, the picking purity rate and breakage rate were the main evaluation indexes, and the Box–Behnken test method was used to study the speed of the peanut-picking roller, the feeding amount, and the picking gap as the test factors. The results showed that the picking purity rate is 98.95%, with an error margin of 0.98%, compared to the predicted value under the conditions of 342 r/min speed, 0.75 kg/s feeding amount, and 32 mm picking gap. The breakage rate is 4.23% and the error is 0.4% compared with the predicted value, indicating that the optimized model is reliable and predictive. This study provides a theoretical basis for the optimal design of the peanut-picking system of peanut-picking combine harvesters in hilly areas.

Excerpt: Introduction - Peanuts are one of the important economic crops in China and also a significant source of foreign exchange income. China is one of the world's major peanut producers, with a planting area second only to India. The peanut planting area in China is about 4.62 million hectares, accounting for 14.63% of the world's total, ranking second in the world in terms of area and first in terms of production [1,2,3,4]. Peanut cultivation in China is widespread. In 2022, the top five provinces in terms of peanut planting area were Henan, Shandong, Guangdong, Sichuan, and Hebei, with planting areas of 1.287 million hectares, 0.6098 million hectares, 0.347 million hectares, 0.295 million hectares, and 0.232 million hectares, respectively...

Autodesk – Have your read the article by Emily Suzuki covering Additive Manufacturing's Industrial Significance in Aerospace.

Excerpt and you can find the information below: "In the industrial world, the rise of 3D printing—or additive manufacturing—has been a revelation in cost savings and efficiency."

Web - Autodesk - Additive Manufacturing's Industrial Significance in Aerospace - Emily Suzuki

In the industrial world, the rise of 3D printing—or additive manufacturing—has been a revelation in cost savings and efficiency. The market is growing exponentially as industries realize the benefits of additive manufacturing—and the aerospace industry is no exception. Aerospace manufacturers have achieved varied levels of adoption, yet one thing is unequivocally clear: these adopters stand to benefit immensely. Let's explore how industry players have hopped aboard, and how printing will impact these adopters moving forward.

Why additive manufacturing? Today's products are defined by their ability to uphold both form and function, especially as designs become increasingly intricate. There are now many more moving parts and components involved in every application. Furthermore, companies have introduced complex geometries and curvature into their designs. These changes have prompted responses from the manufacturing realm.

Traditional manufacturing processes aren't highly adept at crafting intricate shapes - a lot of tooling, machining, & post-processing is needed to get designs where they need to be, which can increase lead times and overall costs.

For example, CNC machinery is highly expensive and specialized and comes with its own workforce requirements. Under the additive model, an equivalent level of production may be achieved with far fewer machines, without sacrificing functionality.

The aerospace industry is expected to experience a boom, and ongoing technological advancements will occur in lockstep. Imagine how streamlined production—even for critical parts like nozzles, controls, and suspension components—might supercharge output in the long run. The same applies to high-volume contractors who produce anything from engines and aircraft to naval craft.

Benefits of additive manufacturing for aerospace - Additive manufacturing's widely known benefits include lower costs and higher speeds when compared to conventional manufacturing. It comes as no surprise that the aerospace industry reaps both of these benefits when applying additive manufacturing to their product development cycles. Numerous applications can benefit from 3D printing's rapid prototyping and production flexibility—even a single 3D printer can produce a nearly limitless breadth of designs respective to its internal dimensions.

Thermoplastics, alloys, metals, and mixed materials are essential pieces of today's products. Additive manufacturing allows engineers to conceptualize—and ultimately create—multidimensional, complex parts at a faster clip, as very few restrictions are placed on structure, orientation, and overall finish quality.

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How does the aerospace industry currently use additive manufacturing?

Presently, 3D printing serves a handful of different purposes across pertinent industries, filling a role in research and development—an outlet that aerospace players invest in. It's also used for proof-of-concept projects, where small-batch and singular production are common. Companies routinely employ additive manufacturing for prototyping or scaled production projects.

3D printing can mean something different to everyone, so how are these industries making their mark? Prototyping and proof-of-concept made up the vast majority of printing applications across all industries last year—aerospace investments have somewhat mirrored that trend.

Though 3D printing emerged in 1984, today's modern production hardware (and the tasks at hand) are many magnitudes more complex than they have previously been. That trust in additive manufacturing is particularly hard-earned in these industries, where safety and reliability are paramount.

Aerospace application case studies - Let's take a look at a few more specific examples of aerospace companies that are currently using additive manufacturing today.

NASA - It's no doubt that hands-on training is essential in the engineering field. Maintenance crews and engineers must have an intimate understanding of how mechanical components operate, coexist, and even malfunction. This is where surrogate parts come in, which are physical, 1:1 placeholders for existing parts to help alleviate expensive issues that come from creating multiple, finalized parts. 3D models can get the job done inexpensively while providing a user-friendly learning experience, which is why NASA commonly uses additive manufacturing.

Airbus - Airbus started using metal additive manufacturing to produce aerospace components in 2014, the year the company made history for flying a 3D-printed part on a commercial jetliner for the first time. According to Airbus, weight reduction is another driving factor for aerospace manufacturers to employ 3D printing technologies, as it directly leads to lower fuel consumption. "Every kilogram saved prevents 25 tons of CO_2 emissions during the lifespan of an aircraft," states the company's website. The part on the aircraft was a titanium bracket, which sounds like a small step for the early adopter. However, the improvements made to the supply chain of this metal part were noticeable enough to make 3d printing technologies an ongoing effort for the company.

Boeing - Boeing is another big player in the aerospace sector that has made an ongoing effort to make additive technology a part of its process. In addition to investing in 3D printing startups like Morf3D, Boeing has worked on numerous projects that incorporate additive manufacturing. One of their largest (literally) projects was a 12-foot-long, single-piece tool for the 777X program, created in partnership with Thermwood. New technology was used to fabricate the tool in just one piece, which cut costs and reduced the printing process, as fewer parts needed to be printed.

The future of additive manufacturing in aerospace - Significant investments have been set in motion, signaling confidence in 3D production. As more experiments follow, the world can likely expect aerospace companies to claim additive manufacturing as a central pillar of their operations.

The introduction of cloud-based software like Autodesk Fusion has made it even easier to implement additive manufacturing into your own workflow—whether you're working for an aerospace company or starting a company of your own. Fusion is a CAD/CAM/CAE and PCB software that unifies design, engineering, electronics, and manufacturing into a single platform. What are you waiting for? Download Fusion today.
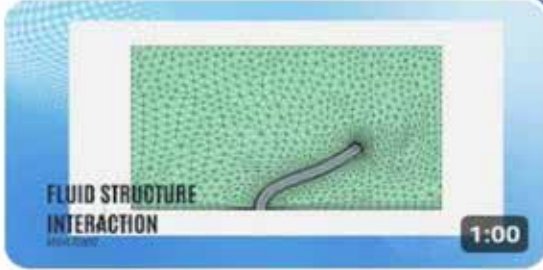
> **DFE-tech: On our YouTube Channel you can find webinars, simulations and learning videos**
>
> We are always updating the YouTube Channel for your convenience to have information, learn, and gain knowledge.!

YouTube – Videos you may have missed.

Webinar : Ansys Mechanical (Simulation of Pressure Vessels)

Ansys Fluent : Fluid Structure Interaction

Ansys HFSS : H-Bend Waveguide

Webinar : Ansys Electronics (Conical Spiral Antenna Simulation...

Ansys HFSS : Twist Waveguide

Ansys LS-DYNA

RBF Morph – Check out this insightful video by Fondazione Gabriele Monasterio Regione Toscana CNR, a leading Italian research center for cardiovascular and pulmonary diseases.

YouTube - **Aortic aneurysms** effect 5 to 10 people per 100,000, and thanks to cutting-edge research like this, we're advancing toward better and quicker interventions.

In this video, you'll see how a digital twin is built to help surgeons treat aortic aneurysms, using innovating technology from partners ANSYS, RBF Morph, and RINA

With ANSYS RBF Morph Fluids Software, clinical and patient date are combined to simulation blood flow inside aortic aneurysms. This allows clinicians to predict aneurysm growth and bulge formation, providing essential tools to help surgeons intervene faster and more efficiently—potentially saving lives.

Fondazione Toscana "Gabrielle Monasterio" coupled clinical and patient data with ANSYS and RBF Morph fluids to help clinicians better understand the blood flow within aortic aneurysm so they can determine aneurism growth and bulge formation.
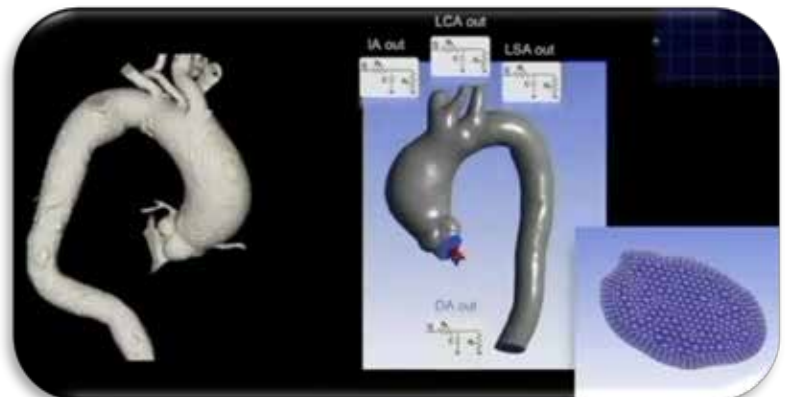
CADFEM India: The Kopter Group is developing a new generation of helicopters. These helicopters are equipped with a variety of antenna systems for communication purposes. Electromagnetic simulation helps to avoid interference in order to ensure clear transmission and reception behaviour**.**
Images: © kopter

CADFEM – Web - Kopter Group AG

RF interference simulation for antenna positioning Avoid interference between different transmitting and receiving units with high-frequency electromagnetic simulation

Trouble-free operation of antenna systems
Specialist field: Electromagnetics
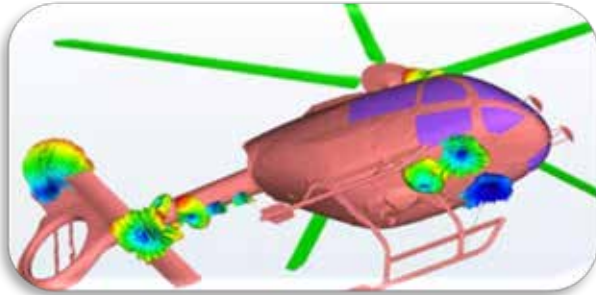
Installed radiation pattern of the different antennas on the SH09 helicopter.

Task

Kopter Group was founded for developing, building and supporting a new generation of turbine helicopters. With this industrial vision, Kopter Group developed the SH09, guaranteeing to the operator superior operational performance, safety and life cycle economics that make the difference.
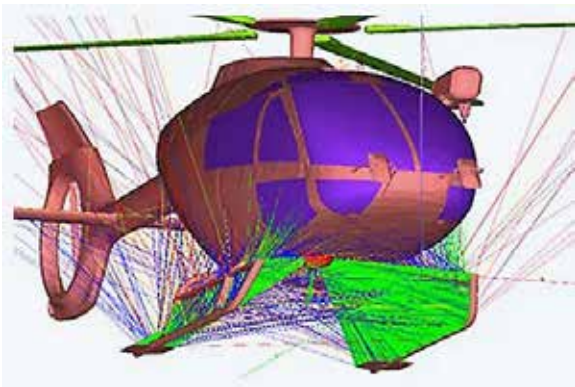
Visualization of the shooting and bouncing rays for one specific VHF antenna (only electromagnetic rays, which bounce on the helicopter surface are shown).

A modern helicopter needs a large number of high frequency (HF) systems for communication and other purposes. Malfunctions caused by electromagnetic interferences (EMI) of the different HF-systems, have to be avoided. To save time and costs, an interference analysis was performed using the software Ansys HFSS (SBR+ solver, formerly Savant; EMIT) in an early stage of the project to choose the best possible positions of the different antennas.

Solution - To ensure interference free operation for all HF-systems, antennas and radios (including filters) have to be chosen appropriately. The radiation patterns for the antennas installed on the fuselage (Fig. 2) and the coupling matrices for each antenna pair were computed using a shooting and bouncing rays algorithm (Fig. 3). Additionally, the radio types were incorporated in the model, allowing for realistic EMI margins (margin to a disturbing interference event). The EMI margins matrix for every antenna pair was computed (Fig. 4) and compared for several antenna layouts. With this investigation the optimal locations for the miscellaneous antennas could be found.

EMI Margin Matrix before a) and after b) the optimization

· (red = interference event present,

· yellow = no interference event but small margin,

· green = no interference event and sufficient margin)

Customer Benefits

· Studying different antenna arrangements, the best possible positioning layout could be identified without the need of lengthy testing and rearranging of the antennas on the fuselage, which would be very costly in terms of time and money.

· Therewith, the development process could be substantially accelerated by simultaneously minimizing the risk of malfunctions of the HF-systems.

CADFEM D-A-CH

Web - YouTube Biking Simulation Episode 8

Happiness is when you turn your passion into your profession! Become a simulation engineer. Simulation shows you the things in everyday life from different perspectives. Simulation is more than software.
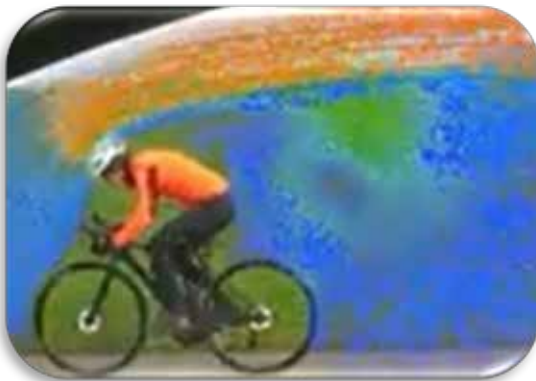
D3view: The data-to-decision platform, enabling the acceleration of virtual product design, development, and optimization.

Founded in 2003, D3View is headquartered in Rochester Hills, Michigan, USA, to assist engineers & scientists in obtaining knowledge and insights from their data.

Each month we will showcase one of D3View's different applications or information:

A quick look at: One, Complete Platform for All Your Data Needs

D3View Platform- One, Complete Platform for All Your Data Needs. With Individual Applications that Work Symbiotically to Make the Process Smooth

Scientific Databases - We help you organize and structure your data so you can visualize it efficiently. Store your digital assets in a structured database that is powered by interactive visualizers to support decisions.

.

HPC	Simulations	Templates	Simlytiks	Workflows	Databases

HPC Management
- Submit simulations on the HPC through on-premise, full web-based or hybrid configuration.
- Process, manage and explore data in real time so you can rapidly decipher data into relevant information.

Simulations
- With d3VIEW, you can manage simulations in a whole new way.
- The smooth Simulations interface provides the ability to seamlessly create, track, update, compare and share your simulations and their data more efficiently.

Data Extraction Templates
- Templates help turn data into information and help automate the process of extracting information from a raw simulation or experimental files.
- Designed to extract from multiple parallel simulations, they can scale to thousands of simulations at the same time.

Simlytiks
- Use over 40+ visualizations to mine data, eliminate noise and reveal information to enable faster decisions.
- With a data-source agnostic approach, Simlytiks can be used with any data originating from experimental labs, simulations or CSV/TSV/Excel files.

Workflows
- Powered by 800+ workers, Workflows help break down complex business processes into simpler tasks that can be chained to transmit data and perform tasks such as data sanitizing, decision-making and job submission.
- Execute complex workflows either in the browser, server or your desktop giving you the flexibility to run the workflows on any device.

Arup and Oasys Ltd.

Our YouTube Channel for information, learning and knowledge

Oasys LS-DYNA Environment - Our YouTube Channel

2:57	6:42
Matt Smolka from Lotus Engineering shares his experience...	**Validation Criterion 1 REPORTER Template**
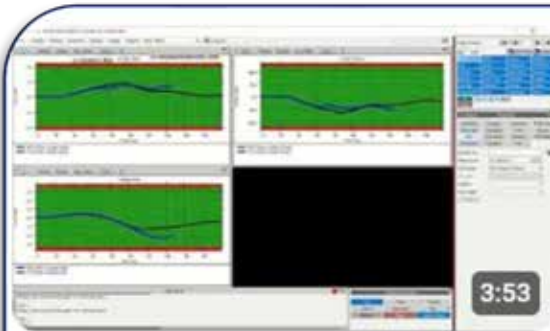
3:53	4:56
Validation Criterion 2 in Automotive Assessments	**Validation Criterion 2 REPORTER Template**
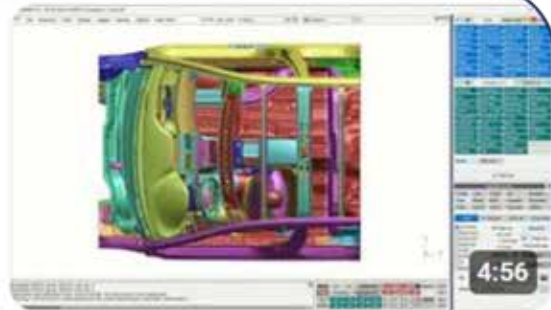
2:23	1:32	26:16
Mads Nielson from TECOSIM shares his experience working wit...	**Michał Sobota from MESco shares his experience with the Oasys LS-...**	**Interacting with the Oasys LS DYNA Environment with Python**

OZEN Engineering: Don't miss the blog by German Ibarra

Accurate Particle Breakage Simulation is crucial in many industries such as mining, pharmaceuticals, construction, and food processing.
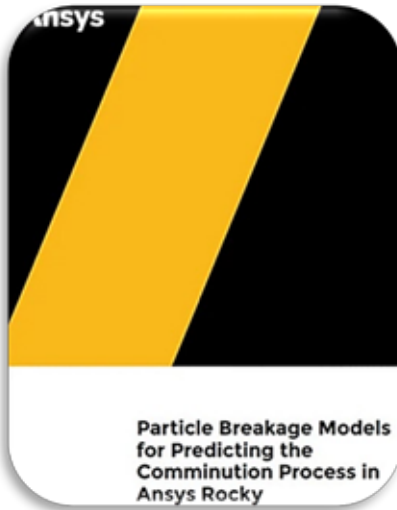
Particle Breakage Models for Predicting the Comminution Process in Ansys Rocky

Simulating Particle Breakage in DEM - The Importance of Accurate Particle Breakage Simulation - German Ibarra -

Discover how particle breakage methods using the Discrete Element Method (DEM) enhance the realism of simulations for industrial applications.

The ability to simulate particle breakage accurately provides insights into how materials behave under mechanical stresses, leading to improved efficiency, product quality, and cost savings.

There are some reasons for its importance:

- Optimizing Industrial Processes. It helps optimize processes like grinding, crushing, and milling by predicting how particles will break under specific conditions.
- Reducing Costs and Energy Consumption. Breakage simulations allow industries to fine-tune equipment settings to achieve desired outcomes with less energy consumption and fewer operational costs.
- Product Quality Improvement. In industries like pharmaceuticals and food processing, controlling particle size is essential for product quality.
- Safety and Equipment Longevity. Simulating particle breakage can also highlight potential equipment wear and tear.
- Design and Innovation. With reliable breakage simulations, engineers can explore new materials and methods without the need for costly, time-consuming physical testing.

Computational approach - The Discrete Element Method (DEM) is a numerical technique used to model the behavior of granular materials. It considers particles as discrete entities that interact through defined contact laws. The main principles of DEM include the representation of particle shapes, the calculation of contact forces, and the integration of Newton's equations of motion.

Ansys Rocky provides different options for predicting the comminution process for different granular materials, such as fibers, shells and solids with customed shapes.

There is a white paper available for download (see the link on the website) that describes the approaches for simulating breakage, such as,

- · Impact Energy model - Ab-T10 breakage model - Tavares breakage model
- · Fragment size distribution models (Gaudin-Schumann and Incomplete beta function)

Drop Weight Test - The Drop Weight Test is a common method for assessing impact resistance and fracture toughness in materials. It involves dropping a weight onto a sample from a set height to mimic real-world impacts. This test measures energy absorption before material failure and provides data to calculate Ab and T10 parameters, which describe the material's breakage properties. A brieft description of both parameters is presented as follows:

- · Ab parameter. The product of A and b is commonly used as an index to classify materials based on their impact breakage resistance. A lower Ab value indicates a tougher material that is harder to break, while a higher Ab value suggests a more brittle material.

- · T10 parameter. Higher T10 values indicate a greater degree of breakage, meaning more fine material is produced from the impact. It is used to determine the material's resistance to crack propagation, providing critical data for applications in industries like automotive, aerospace, and construction, where materials are subject to impacts.

Demo - The Drop Weight Test simulation is carried out in Ansys Rocky to demonstrate the setup of the Ab-T10 breakage parameters. By adjusting these values, future Rocky simulations can be calibrated.
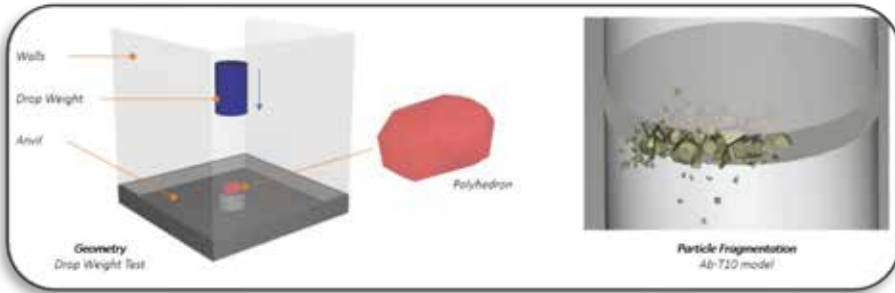
In this Demo, a 10 kg weight drops from a height of 30 cm to impact a 5.8 cm custom polyhedron particle, which then breaks into multiple fragments. The user can modify the input parameters as desired.
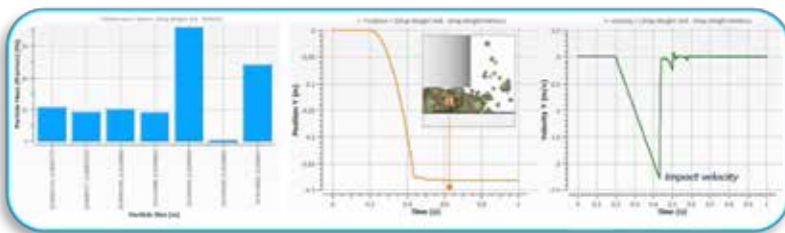
Postprocessing includes the analysis of various data sets. The image below shows the Particle Size Distribution and percentage mass for each group (left), the drop weight's position throughout the simulation (center), and its velocity (right).

The velocity graph indicates the impact speed and moment of impact, while the final position of the drop weight reveals the presence of remaining particles after the test.
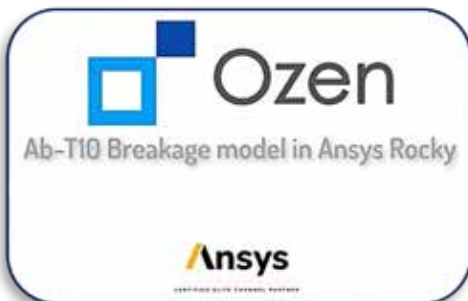
Check out our video on the website to see the full process of setting up and running the Drop Weight Test simulation in Ansys Rocky.

Trina – Editor of Town Newspaper Announcements
 We thank Barbara Leichtenstern on social media.

Applus+DatapointLabs is a Silver sponsor of the Ansys Transportation Summit & International LS-DYNA User Conference

Our Lab is delighted to be a Silver sponsor of the Ansys Transportation Summit & International LS-DYNA User Conference, **October 22-23, 2024** in Plymouth, MI.

Meet us at the Applus+DatapointLabs booth to hear about our Expert Material Testing, Modelling, Validation for Ansys and LS-DYNA !

Applus+ DatapointLabs is a Silver sponsor of the [Ansys Transportation Summit and International LS-DYNA User Conference](#) taking place October 22-23, 2024 in Plymouth, MI.

Our representatives will present our TestPaks for CAE and CAETestBench solutions for Ansys and LS-DYNA simulations. Look for us in the exhibit hall.

[Applus DatapointLabs Technical Center for Materials](#)

DatapointLabs is a US-based center of excellence for the measurement of physical properties of materials required for product development, CAE and R&D. Established in 1995, the company's ISO17025 and Nadcap accredited test laboratory provides 5-business-day turnaround on standard testing of virtually any materials used in the products of today and tomorrow.

Material testing and material parameter conversion to create material cards for over 30 simulation (CAE) programs, including finite-element analysis, crash and drop-test simulations, injection-molding and other process simulations

TestPaks® unleash the power of your CAE programs

· TestPaks® are complete- they contain all the measurements and model fitting needed for your simulation.
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· TestPaks® are easy to use- CAE-ready material files are deposited into your Material Card Library at Matereality.

> "Cindy, in the paper at the 13th International Users Conference the LSTC dummy was used to represent the football players. Did you know that helmets are very important?"
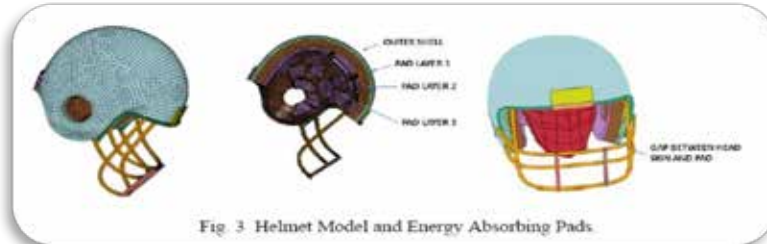
Fig. 3 Helmet Model and Energy Absorbing Pads.
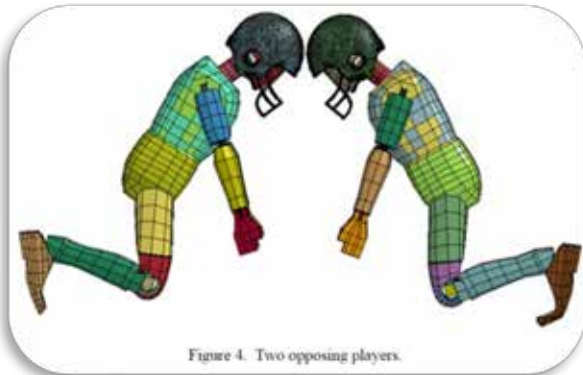
Figure 4. Two opposing players.

Web – DYNALOOK - Mild Traumatic Brain Injury-Mitigating Football Helmet Design Evaluation

M.S. Hamid. Minoo Shah
Advanced Computational Systems, LLC, MI., USA
IDIADA Automotive Tech. MI., USA

Abstract Excerpt: **Concussion, also known as mild Traumatic Brain Injury (mTBI) is the most common sport-related head injury**. Football is the most common sport with higher concussions in USA. Helmet is the equipment being used in mitigation of mTBI. There are numerous designs of helmets which meet the requirements of sport regulation committee. In this paper, a football helmet is evaluated using numerical methods. **The brain and the tissues in the human head are modelled using continuum Smoothed Particle Hydrodynamics (SPH). The brain tissues are generated by segmentation from human brain MRI data. The LSTC dummy is used to represent the football players.** The brain tissue is fitted in the cavity of the dummy head form. Two different impact scenarios are simulated in this study. The results for these impact conditions are presented.

Excerpts Introduction...Centers for Disease Control (CDC) estimated reveal 1.6 million to 3.8 million concussions occur each year in the USA. Football is the most common sport with higher concussion risk due to the nature of the sport. A professional football player will receive and estimated 900 to 1500 blows to the head during a season. Impact speed of a football player tackling a stationary player is around 25mph. The topic of concussions and the effect that they have on the human brain are being increasingly scrutinized by media, political personnel and research community. Tremendous amounts of research studies have been conducted by medical, defense and academic communities in understanding the etiology of concussion, treatment protocols and mitigation strategies by designing better equipment.

...

In this study, a generic helmet with foam padding is used in design evaluation for mitigation of brain injury. The brain geometry is developed from MRI image using segmentation technique. **The brain is modeled using continuum SPH technique. The player is represented by H3 LSTC 50th percentile dummy**...

Your teeth are important to keep healthy

Did you miss the paper listed below, Excerpt: "Taking the current material values used in implant treatments as a reference, **finite element analysis (FEA) was performed by applying different axial loads to each implant system model in the ANSYS** software (version 24.1)."
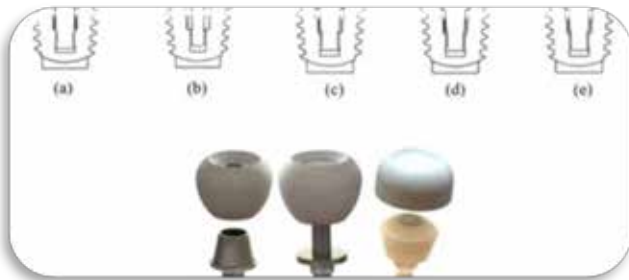
Web – MDPI - Examination of Various Abutment Designs Behavior Depending on Load Using Finite Element Analysis

Mehmet Onur Yağır, Şaduman Şen, Uğur Şen
Sakarya Univ., Turkey:
- Electronics & Automation Progr. Adapazarı Voc. Sch.
- Dental Implant Design & Application Lab,
- Metallurgical Mat. Engineering, Faculty of Engineering

Excerpt - Abstract - Studies on dental implant abutments' geometric design and material selection offer significant innovations and results. These studies aim to improve the abutments' functionality and aesthetic performance, minimize microcavities' formation, and ensure implant-supported prostheses' longevity. For example, CAD-CAM fabricated custom abutments have been found to produce a better marginal fit and fewer microgaps than standard abutments. In an in vitro study, transepithelial abutments offered lower microgap values than titanium-based abutments and provided a better fit at the implant–abutment interface. It is known that studies to improve mechanical and biological performance with Polyether Ether Ketone (PEEK) material have been addressed. New materials such as PEEK and zirconia have offered significant advantages in biocompatibility and aesthetics. Along with those studies, different abutment designs are also important. Abutment geometry is optimized to improve stress distribution and minimize peri-implant bone loss. In implant and abutment connections with different angles, mechanical life performances may vary depending on static and dynamic load. These studies emphasize the importance of material research on different types of connections to improve dental implants' durability, homogeneous load distribution, and reliability. The abutment parts used in implant treatment are insufficient to distribute the load homogeneously against chewing pressure due to their materials and geometry. Non-uniform load distribution damages the abutment and the prosthetic crown, accelerating the wear process. This study aimed to create different abutment designs to improve dental implants' biomechanical performance and longevity. This study aimed to increase the mechanical durability of the implant–abutment connection by reducing stress concentrations in response to masticatory compression on the abutment in different directions and forces and to guarantee the long-term success of the implant system by providing a more homogeneous stress distribution. It aimed to apply different forces in the axial direction to these models in a simulation environment and to calculate and compare the deformation and stress load distribution. As a method, three-dimensional models of the parts used in implant treatments and forming the implant system were designed. Different abutment designs were created with these models. Taking the current material values used in implant treatments as a reference, finite element analysis (FEA) was performed by applying different axial loads to each implant system model in the ANSYS software (version 24.1).

Marco Evangelos Biancolini
  RBF Morph, MeDiTATe Project. LivGemini

…To tackle problems dealing with highly deformable specimens, moreover, we proposed in this paper an approach to study large displacements taking advantage of the continuous analytical field obtained by means of RBF, circumventing all the shortcomings of a FEM-based approach such as the preparation and handling of a non-linear analysis.
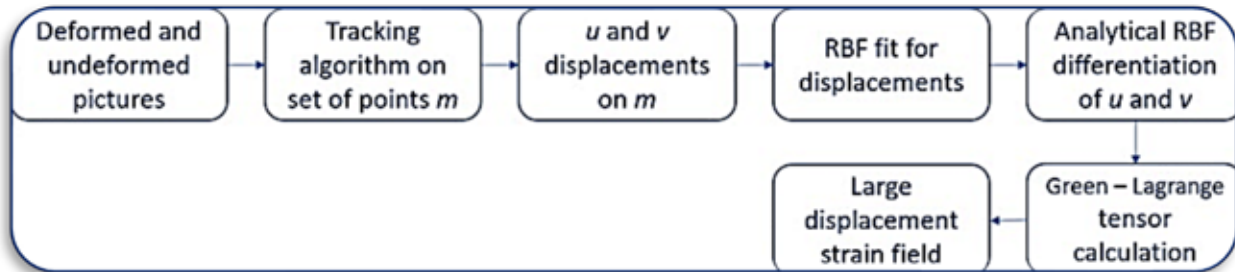
Web - MDPI - A Post-Processing Method Based on Radial Basis Functions for the Fast Retrieval of the Strain Field in Digital Image Correlation Methods

C. Groth, A Chiappa, S Porziani, M.E. Biancolini, E. Marotta, P. Salvini
  Dept. of Enterprise Engineering,
  Univ. of Rome "Tor Vergata", Italy

Abstract - Digital image correlation methods allow the determination of the displacement (and thus the strain) field of a target by picture comparisons, without the application of strain gauges or other invasive devices. Homologous sites are mapped from the undeformed to the deformed configuration, and displacements retrieved at a cloud of points in a scattered fashion. Radial basis functions (RBF) offer a rapid and reliable tool to post-process on-the-fly data from image correlation, in order to compute deformations directly without the need for generating a numerical grid over the measurement points. Displacements and associated strains can be computed only where desired, tracking automatically only the most reliable features for each image. In this work, a post-processing strain evaluation method for large displacement problems, based on RBF and the Green–Lagrange tensor, is presented and demonstrated for several test cases. At first, the proposed method is adopted on a set of artificially generated pictures, demonstrating a faster convergence with respect to FEM even when few points are used. Finally, the approach is applied to cases for which experimental results are available in the literature, exhibiting a good agreement.

Excerpt - Introduction - The digital image correlation technique is gaining increasing interest due to the possibility of measuring the strain field of a target without the application of any invasive device in situ, only resorting to the comparison of digital images taken during load application [1]. Although other strategies are possible [2], the painted speckle technique is the easiest way to perform the correlation strategy since it requires a simple surface preparation and cheap equipment [3]. The painted speckles are a scattering of irregular spots that, in digital images, correspond to clusters of colored or grey pixels. The tracking of such reference points allows reconstruction of the evolution of a target across images. Starting from the original work by Peters and Ranson [4], many authors propose their approaches to this goal: bicubic spline interpolation [5], wavelet transformations [6], and techniques based on FEM representation of displacements [7] just to cite a few. In [8], the modal pursuit method is proposed, which is able to gain large displacements from the comparison of only two pictures: before and after load application.

The Old Racers Automotive
Innovative News & Track
No one knows his name. You yell, "HEY, old racer."

October

In recent years, Automated Driving Assistance Systems (ADAS), particularly Level 2 systems, have become very prevalent in consumer vehicles. These systems are intended to help the driver maintain a steady speed, keep a safe distance from the car in front, and keep the vehicle lane-centred by combining Adaptive Cruise Control with Lane Centering technologies. However, they still require the human driver to always be engaged and monitor the environment.

Web Applus Idiada - [Innovation - ENGAGE project](#)
Limitations and discrepancies between driver behaviour and driving aiding systems - Concerns have arisen regarding driver inattention and inappropriate behaviour when using Level 2 systems, as drivers may not fully understand the system's limitations and continue to be responsible for vehicle control. Therefore, it is crucial for drivers to maintain focus when using these systems.

Features such as Adaptive Cruise Control (AAC), Lane Change Assist (LCA) & Automatic Emergency Braking (AEB), provide the driver with an assisted and comfortable driving experience. The system assists the driver in performing the driving task, but at the same time, they must convey to the driver that they are not driving in their place, and that they must remain focused and attentive.

When implemented correctly, these systems can provide significant benefits for drivers, but if they don't guarantee the right level of engagement, they can be a safety risk by creating false expectations about the vehicle's abilities and overreliance. Euro NCAP Vision 2030 recognizes driver engagement as a fundamental pillar to ensure the safe deployment of assisted driving systems and considers it a key factor.

New test methodology to assess driver engagement with ADAS systems - To address this challenge, IDIADA Human Factors multidisciplinary team has developed a specific test methodology for evaluating driver engagement in assisted driving scenarios. This methodology captures pre-use information and driver-vehicle interaction during assisted driving, considering factors such as the user interface, warnings, and system control behaviour. In a pilot evaluation using two vehicles with different assisted driving concepts, IDIADA recruited 39 naive drivers and instructed them to drive on a test track in a continuous highway driving scenario with the longitudinal and lateral driver assistance functions active. The results of this evaluation demonstrated variability in how drivers interacted with the systems during normal driving, with subjective measurements showing differences in engagement metrics.

Objective measurements for driver reaction to a critical event also showed differing levels of driver vigilance associated with the perceived functionality of individual systems.

Towards a global assessment methodology to test and validate driving assistance systems - This test methodology offers a way to compare users' driver engagement on the systems of different vehicles and evaluate them from a combined subjective and objective point of view. It can be applied to any type of vehicle and any type of autonomy level, making it a valuable tool for system design verification, consumer testing, and regulatory testing. Furthermore, this methodology marks progress in the development of assessment methods for global assistance systems and offers a platform for further refinement and advancement of testing procedures. It also holds potential applications in consumer and regulatory testing with representative drivers. Currently, the study is in a phase of further development. The same methodology will indeed be tested in the dynamic simulator, replicating the experiment conducted on the track with the implementation of additional subjective and objective metrics.

The Old Racers Automotive Innovative News & Track

October

No one knows his name. You yell, "HEY, old racer."

FORD – WEB - **Raptor, Race Trucks and New Drivers: Highlights from Inaugural Raptor Rally**

Photo by J. Ward

Nearly 300 Ford Raptor owners, guests, VIPs, Ford ambassadors, friends and media descended on Fairfield, Utah, for the inaugural Raptor Rally, a one-day exclusive off-road experience.

The day included thrilling off-road experiences, including:

- trail rides,
- expert workshops,
- the chance to jump their own Raptor,
- meet-and-greets
- and hot lap opportunities with pro-off-road racers Vaughn Gittin Jr., Loren Healy, Chris Polvoorde and more.

Plus, there were numerous Raptor vehicle updates and the latest examples of:

- Ford Performance engineers and drivers learn from off-road racing,
- Transfer technology from racing vehicles to customer models.

US Airforce Picture of the Month

PULA, Croatia - A U.S. Air Force pararescueman, assigned to the 57th Rescue Squadron, fast ropes out of a U.S. Air Force HH-60G Pave Hawk into the Adriatic Sea during exercise PR ACE Croatia 24 near Pula, Croatia, Sept. 13, 2024. Multinational exercises with allies and partners demonstrate and strengthen a shared commitment toward global security and stability.

(U.S.A.F.photo by Airman 1st Class Joseph Bartoszek)

Double Eagle - Two F-15 Strike Eagles, assigned to the 4th Fighter Wing, fly in formation over the southeastern United States, Aug. 29, 2024. The F-15s achieve superior maneuverability and acceleration because of their high engine thrust-to-weight ratio and low wing loading.

 (U.S.A.F photo by Staff Sgt. Lauren Cobin))

On approach - An F-22 Raptor assigned to the 1st Fighter Wing, Joint Base Langley-Eustis, Va., approaches the boom of a 134th Air Refueling Wing KC-135R Stratotanker to refuel along the east coast of the United States, Aug. 14, 2024. The KC-135R is capable of offloading 7,381 pounds of fuel per minute, enabling it to refill the F-22's 18,000-pound capacity tanks in less than three minutes. (

U.S. Air National Guard photo by Tech. Sgt. Teri Eicher)

We're thrilled to announce the publication of our research paper noted below that is now available on ResearchGate. **This work is authored by our distinguished colleagues Andrea Chiappa, Andrea Lopez, and Corrado Groth.**

This study addresses a crucial challenge in fluid-structure interaction (FSI) applications: ensuring reliable data exchange. The paper presents a detailed comparison of two mapping methods—RIBES and preCICE—both utilizing radial basis function (RBF) interpolation.
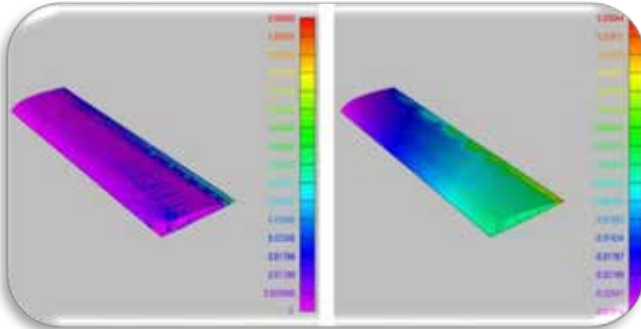
Research Gate – Web - **"Advanced RBF Methods for Mapping Aerodynamic Loads onto Structures in High-Fidelity FSI Simulations,"**

Our research underscores the significance of balance preservation in data mapping and its influence on structural outcomes. If you work in CFD, CSM, or FSI, you'll find this paper particularly insightful!

Abstract: The reliable exchange of data is a crucial issue for the loose coupling of computational fluid dynamics (CFD) and computational structural mechanics (CSM) modules in fluid–structure interaction (FSI) applications. This paper presents a comparison between two methods for mapping the traction field across mismatching grids, namely the RIBES method and the preCICE algorithm, both based on radial basis function (RBF) interpolation. The two methods demonstrate different degrees of control over balance preservation during mapping, with the RIBES algorithm exhibiting greater efficacy. Test benches are a parametric double curved geometry and a wind tunnel mock-up. In this second case, forces from mapping are used to load a CSM model to retrieve stress and displacement fields. Differences in FEM results are appreciable although not significant, showing a correlation between the accuracy of balance preservation during data mapping and the structural output.

Excerpt - Introduction - **The effective and precise combination of computational fluid dynamics (CFD) and computational solid mechanics (CSM) routines is integral to fluid–structure interaction (FSI). Aerodynamic components such as wings, flaps, rudders and stabilizers are characterized by lightweight and flexible structures. Their mechanical behavior and the dynamics of the fluid flow that grazes over them mutually affect each other.** Frequently, the flexibility of the structures involved is such that this reciprocal interplay significantly alters the situation from what it would be if the structure were assumed to be rigid. From a scientific and technical perspective, there are numerous examples falling into this category, including wind turbines [1], textile roofs [2], parachutes [3] and both the static and transient [4] dynamics of airplane wings, to name just a few. Examining an aerodynamic component thoroughly requires a comprehensive analysis of the interaction between the two fundamental physics. For instance, if the structural evaluation is conducted statically, the component must be considered in its equilibrium state, accounting for its deformed shape and the corresponding fluid flow. This integration is generally obtained by resorting to one of two main approaches [5]: the tight approach involves the writing of a unique large system of both fluid dynamics and structural mechanics equations whose solution simultaneously updates variables pertaining to the two physics; the loose coupling approach adopts separate solvers for CFD and CSM problems, and boundary conditions are updated iteratively until convergence. Both approaches possess advantages and disadvantages…
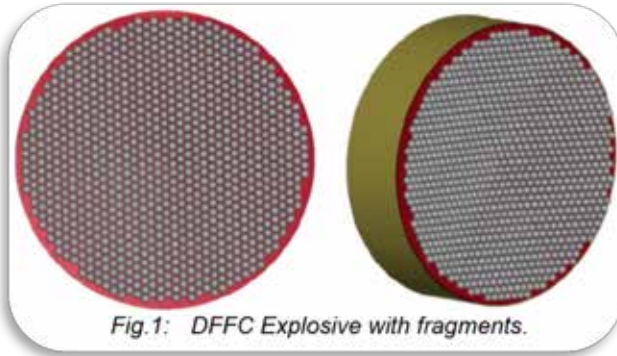
Fig.1: DFFC Explosive with fragments.

Research Gate Web - (PDF available)
Modeling of Directional Focused Fragmentation Charge (DFFC) – Investigation of Different Approaches

İsmet Kutlay ODACI, Samet Emre YILMAZ, İlker KURTOĞLU - FNSS Savunma Sistemleri A.Ş. Ankara / TÜRKİYE

Fig. 1 - The DFFC explosive has a special design, featuring a predetermined quantity of spherical fragments positioned immediately ahead of a defined explosive mass, as illustrated in Fig.1.

The aim of this study is to examine the effects of explosion-accelerated clusters of projectiles, which is in literature referred as Directional Focused Fragmentation Charge (DFFC), on target armor structures. The primary challenge in this study is to develop an accurate model for the explosive and fragments configuration, since the scenario involves a close-range explosion and fluid-structure interaction (FSI) due to the direct contact of fragments with the explosive. To find an appropriate and stable solution to this challenge, various techniques are explored for modeling both the explosive and the cluster of fragments.

In the modeling of explosive, two different approaches are considered: the structured Arbitrary Lagrangian-Eulerian (S-ALE) method [1] and the *PARTICLE_BLAST (PBM) approach [2]. In terms of modeling the cluster of fragments, the classical Lagrangian approach and the discrete element method are utilized in combination with explosive modeling techniques. Each of these combinations of methods have their own advantages and limitations which will also be discussed during the presentation of the work.

To evaluate the effectiveness of these modeling techniques, the dispersion of fragments on the target plate is compared with the one obtained in field tests. After comparison of the results, it is observed that utilizing the SALE approach for modeling the explosive and using the classical Lagrangian approach for the cluster of fragments yields a stronger correlation with the dispersion observed in the experiments than PBM method combined with discrete element method.

Introduction - The DFFC explosive has a special design, featuring a predetermined quantity of spherical fragments positioned immediately ahead of a defined explosive mass, as illustrated in Fig.1. These compact spheres, approximately 10mm in diameter, has a significant hardness which is above 60 HRC. After the detonation of explosive, these fragments undergo very high acceleration, striking the target at very high velocities (around 2.5 km/s), resulting in localized damage.

The testing of these types of threats on structures is costly. Hence simulation tools should be used to come across an effective design solution for armor packaging against DFFC threat. In this test configuration, the target plate is located around 5 meters away from the explosive…

Web – MDPI - [Finite Element Analysis of Different Osseocartilaginous Reconstruction Techniques in Animal Model Knees](#)

C. Cosma, D. Apostu, C. Vilau, A. Popan,
D. Oltean-Dan,   N. Balc, G. Tomoaie, H. Benea

Romania:
- Dept. of Manufacturing Engineering, Tech. Univ. of Cluj-Napoca
- Dept. of Orthopedics &Traumatology, Iuliu Haţieganu Univ. of Medicine &Pharmacy
- Dept. of Material Resistance, Tech. Univ. of Cluj-Napoca,
- Academy of Romanian Scientists – Bucharest

Abstract - Lesions of the articular cartilage are frequent in all age populations and lead to functional impairment. Multiple surgical techniques have failed to provide an effective method for cartilage repair. The aim of our research was to evaluate the effect of two different compression forces on three types of cartilage repair using finite element analysis (FEA). Initially, an in vivo study was performed on sheep. The in vivo study was prepared as following: Case 0—control group, without cartilage lesion; Case 1—cartilage lesion treated with macro-porous collagen implants; Case 2—cartilage lesion treated with collagen implants impregnated with bone marrow concentrate (BMC); Case 3—cartilage lesion treated with collagen implants impregnated with adipose-derived stem cells (ASC). Using the computed tomography (CT) data, virtual femur-cartilage-tibia joints were created for each Case. The study showed better results in bone changes when using porous collagen implants impregnated with BMC or ASC stem cells for the treatment of osseocartilaginous defects compared with untreated macro-porous implant. After 7 months postoperative, the presence of un-resorbed collagen influences the von Mises stress distribution, total deformation, and displacement on the Z axis. The BMC treatment was superior to ASC cells in bone tissue morphology, resembling the biomechanics of the control group in all FEA simulations.

Excerpt - 2.5. Conditions of FEA Simulations - The 3D models of the knee joint were uploaded into the ANSYS software, where FEA simulations were developed. The sensitivity of the FEA model to mesh size was tested by applying different meshes with decreasing element sizes down to 0.5 mm. The meshing process resulted in approximately 390,000 elements and 680,000 nodes. The effect of each treatment on the mechanical response of bone tissue was simulated under compression conditions typical of the stance phase of gait, maintaining the treated area in contact with the opposite cartilage (see Figure 3a). The bottom plane the of tibia was rigidly constrained in all directions, and on the top plane of the femur was applied the compression pressure (Figure 3a, blue area)...

My Facebook Page - CERT Volunteers in Your Own Neighborhoods, **a Worldwide Network**

Welcome. **"Training Today's Volunteers to Be Tomorrow's Leaders." For anyone new to CERT, the Community Emergency Response Team Volunteers across the World are Trained to Respond Safely, Responsibly, and Effectively to Emergency Situations. Importantly, they can additionally support their communities during non-emergency events. Below is information you should know. Always stay up to date with your country's emergency information.**

YouTube - Fire Extinguisher Training Video - Fire Extinguisher Types and Uses - This fire extinguisher training video will teach you the different types of fire extinguishers and how to use them. Knowing how to properly operate a fire extinguisher can help save lives and prevent property damage in the event of a fire emergency.

Among the lessons you can learn that are covered in the video:
- Know where the fire extinguishers are located
- Know how to properly operate a fire extinguisher
- Know the correct type of fire extinguishers and the fire you are dealing with.

Types of Fire extinguishers
   The right fire extinguisher must be used for the type of fire
- Class A - Ordinary Fires
- Class B - Flammable Liquids
- Class C - Energized Electrical Equipment
- Class D - Combustible Metals
- Class K - Cooking Oils, Grease, Animal Fats
- Halon Class - Sensitive Equipment

Fire Extinguisher Maintenance and Inspections

Fire Extinguisher Tags

Fighting the Fire

"PASS" Method - How to use a fire extinguisher

Conclusion
- Always call the fire dept
- Make sure everyone has evacuated
- Use the "PASS" Method
- Use the right fire extinguisher type

My Facebook Page - CERT Volunteers in Your Own Neighborhoods, **a Worldwide Network**

Please join Region 2 of the National Preparedness Division for a Pet Preparedness Month Webinar on how to Plan for your Assistance, Service Animals and Pets in an Emergency.

Planning for Your Pets, Assistance and Service Animals in an Emergency

Day: Wednesday
Date: October 30, 2024
Time: 11:00:00 AM PDT
Duration: 1 hour(s)
Fee: Free Class

Overview

Registration page

Discussion:

The American Red Cross (ARC) will discuss how to include your Pets, Assistance, and Service Animals in your Home Fire Safety Plan.

American Red Cross Discussion:

- Pet first-aid
- Planning resources available through ARC.

New York City Emergency Management Discussion

- Describe key strategies on how you can develop a coalition in your community.
- Providing support to people and their animals before, during and after emergencies and disasters.

Who should attend?

- Pet Owners.
- Those who use Assistance
- Those who use Service Animals.

The Old Cattle Rancher's Ranch

No one knows his name.
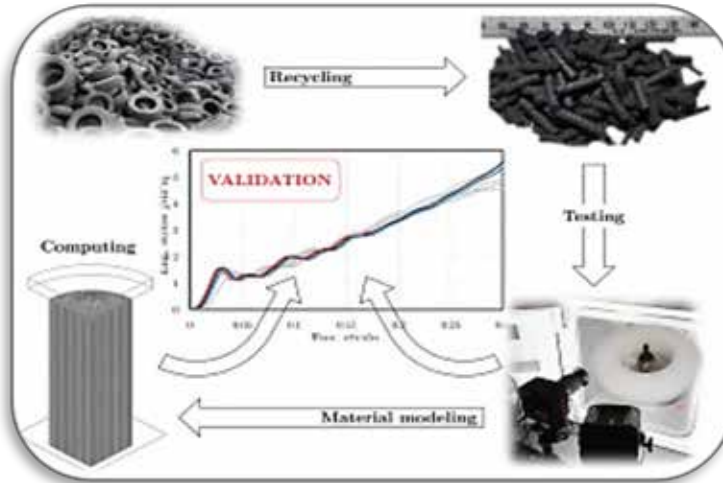**You yell, "HEY, old rancher."**

Agriculture, **Animals, Soil, Equipment, Cattle,**
and whatever he wants.
Right Picture – My dog, Scout, & my horse, Cowboy

October

Excerpt: Tires – End of Life - Numerical validation is done using two solvers on LS-DYNA® software.

Web - Science Direct - Impact properties of an end of life tires' rubber. Numerical validation considering large strain and strain rate conditions

J. González-Vega, G. Castillo-López,
F. García-Sánchez

Escuela de Ingenierías Industriales. Departamento de Ingeniería Civil, de Materiales y Fabricación. Universidad de Málaga, Spain

Highlights

- Properties of a revulcanized rubber are evaluated under impact loads.
- The analyzed rubber comes from recycled end-of-life tires.
- Impact loads under large strain and high strain rates are considered.
- The Bergström–Boyce behavior model has been considered to fit the properties of the materials.
- **Numerical validation is done using two solvers on LS-DYNA® software.**

Abstract - The objective of the authors is to demonstrate that the inclusion of renewed rubber from recycled end of life tires (ELT) can improve the performance of any structural system designed to dissipate impact energy. An interesting application would be its use in road safety barriers. This research starts with the rigorous characterization of the recycled material in order to include it in a viable numerical model. The authors presented, in a previous work (*), the experimental viscoelastic properties of recycled rubber, obtained under impact conditions. Bergström–Boyce (BB) nonlinear viscoelastic model was selected as the most suitable to fit the material behavior. This model is defined by nine material constants that are impossible to obtain, uniquely and directly, considering that only compression test results are available as input data. To overcome this challenge, optimization methods were applied resulting in as many sets of parameters as used optimization methods were considered and, moreover, remarkable differences between constants were observed. Solving this problem is the motivation of the present research: the validation of the optimization method by mean of the numerical evaluation of the obtained sets. **The software considered for the numerical evaluation of impact tests (LS-DYNA®) had two slightly different implementations for the BB model: the original, based on the work published in 2009 by Dal & Kaliske and a more recent one implemented by Bergström, based on his works published in 1998 and 2000.** This leads to a new question: which is the most appropriate implementation-optimization method for calibrating this material? This paper provides the answer to this question carrying out a complete comparative numerical analysis of all sets by means of explicit dynamics simulations. **All calibrations, using the original LS-DYNA® implementation, were in perfect agreement with the experimental results.** However, only one optimization method produced acceptable results for the most recent approach. …

My Virtual Travel Outing
Thank you for joining me on my monthly visit.
Now, let's travel to a museum, landmark, or studio.

Ed Helwig Photography – "An Engineer trying to use the other half of his brain. Please enjoy my modest collection from life's experiences and my travels that I have been fortunate enough to make. See my website for prints if you are interested in purchasing."

Web – Ed Helwig Photography - I am surrounded both by natural beauty and interesting people. I use my camera to document the world and then print images with a focus on the magic I find in daily life. My pictures tell my stories.
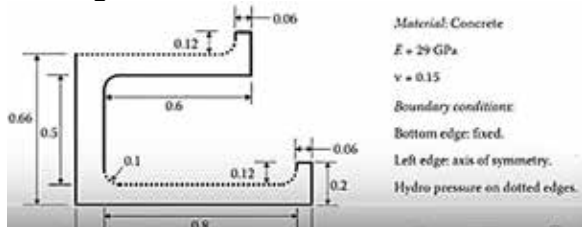
Through my prints and photo books, I invite you to bring bits of my stories into your life and home.

YouTube - [Solidworks Simulation: Garden Fountain analysis under hydrostatic pressure](#) - CAD & Simulations Tutorials - … for 3D modeling and simulation tutorials! Enjoy SolidWorks and ANSYS software with our expert guidance and tutorials."

Garden fountain is usually axisymmetric in geometry and have axisymmetric loads. Only a 2D simulation is enough to evaluate deformations and stresses using solidworks.

Problem Statement – Garden fountains are popular amenities that are often found at theme parks and hotels.   As a fountain structure is usually an axisymmetric geometry with axisymmetric loads and support, only a 2-D model, slice through the 3-D Geometry, is needed to correctly predict the deformation of or stress in the structure. The figure gives the corss section of an axisymmetric model of a two-tier garden fountain made of concrete. Determine the maximum deformation and von Mises stress under the given hydrostatic pressure.

Among the slides-YouTube Presentation:

38
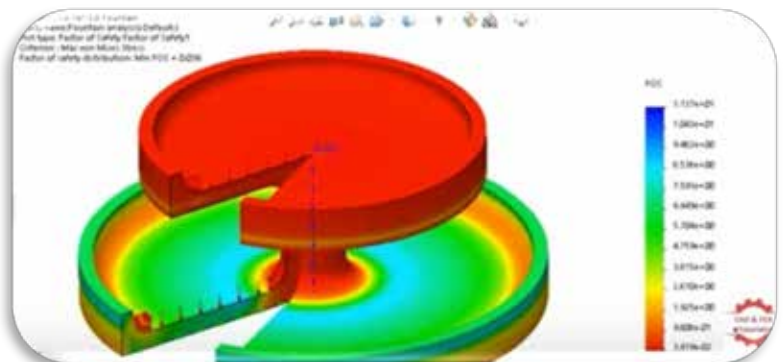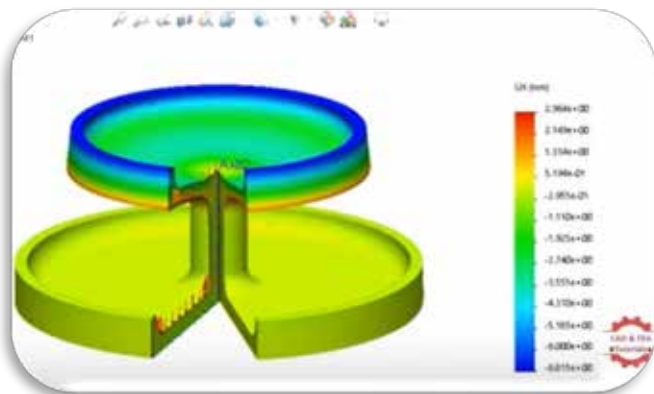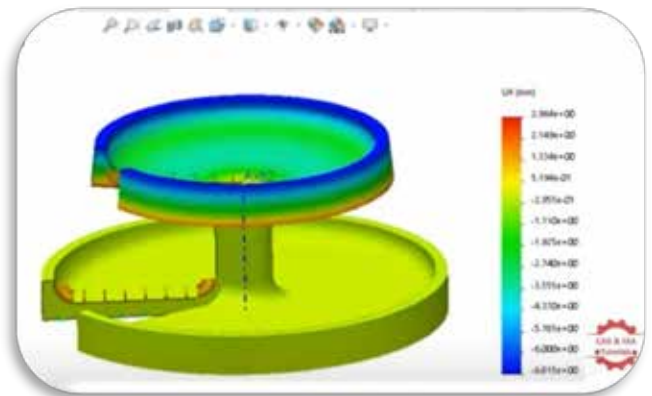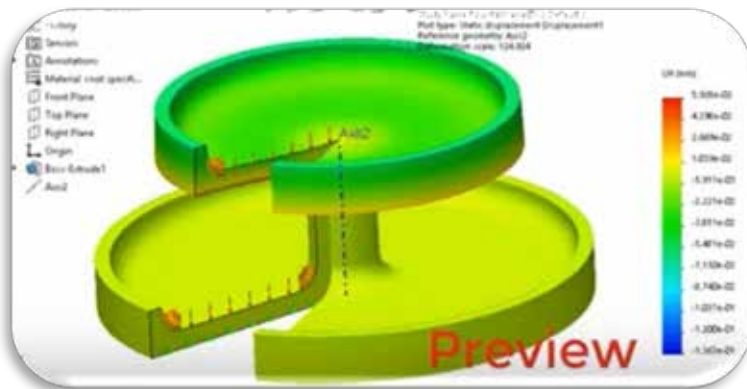
RheKen, Town investigative reporter — October

I'm AI & live on a ranch on the outskirts of the town
I use my Dad CHAT and Mom GPT for assistance.

Investigate: Where did the Secretary go with the pie?

After their wig shopping, they went to visit the Rancher. That is where this investigation begins.

"What the heck really happened to the pie and where is that secretary?"

Once upon a time, in the quiet and picturesque town of FEANTM, nestled between rolling hills and surrounded by vast open fields the Old Rancher, known for his prized rhubarb pies, was in for the shock of his life one ordinary afternoon.

The Rancher was having a nice, quiet morning. He poured himself a cup of hot coffee, the aroma wafting through the air, grabbed the local magazine, and sat at his kitchen table. The morning sun filtered through the window, casting a warm glow on the room. He was happy in the peace and quiet of his home with his fresh-baked Rhubarb pie.

He lifted a bite to his lips, opened the oven and removed a second freshly baked pie. He was already looking forward to having another slice, his anticipation almost tangible. But then he heard knocking on his front door, his excitement turning into disappointment.

"Dang it! Can't a man have a quiet cup of coffee and pie in his kitchen? Now I have to go answer the door!"

He heard a lot of knocking and wondered how many people were knocking on his door. His frustration was palpable, his peaceful morning shattered by the incessant knocking.

Without putting down the pie but carrying it with him he swung open his front door. His eyes widened at the sight standing in front of him.

On his doorstep, wearing brightly colored wigs that seemed straight out of a circus clown act, stood Editor Marnie, The Secretary, and Supervisor Marsha. They were all grinning at him and, at the same time, yelled, "HELLO!"

In his stunned state, the Rancher's hand trembled just before he fainted, overwhelmed by the absurdity of them waving to him on his doorstep, grinning like three crazy women.

His pie was about to land on the ground.

Seizing the opportunity, The Secretary deftly snatched the pie before it hit the ground (we mentioned last month that she can move fast when she wants to). With a quick glance at the unconscious rancher, Marsha and Marnie started medical treatment to wake him up.

When The Rancher regained consciousness and stood up, thanking them, he noticed the absence of both his pie and the Secretary!   He just knew that she ran away with the pie, hoping to enjoy a slice before anyone noticed.

His heart raced with a mix of worry and primarily adrenaline-filled anger.

Determined to find answers, he didn't ask why they stopped by or, more importantly, if they joined the circus.

He hopped onto his tractor, the wheels kicking up dust as he barreled toward The Secretary's property that was adjacent to his place.

To save time, he didn't drive to the road. He headed across his lawn and plowed straight through the secretary's new fence. He never liked the color she painted it. He considered it an incentive to repaint!

The secretary, caught off guard by the Rancher's unexpected arrival, with the loud crash of her new wooden picket fence, was still savoring the last crumbs of the pie with rhubarb smeared across her lips. He had stormed up her steps and right into her kitchen

The evidence was clear. The Secretary stammered and tried to play innocent, but he knew it was an act. She stammered, "OH, Hi Rancher, why are you standing in my kitchen? Can I help you with something?" He whipped out his phone with a grin, snapping a picture of her with the rhubarb still evident on her lips. "Let's see how you like this on TikTok," he threatened, holding up the picture now on his phone.

Realizing she had been caught, the Secretary sighed and confessed she had "borrowed" the pie for a taste test. "Honestly, I was saving it from landing on the ground. You passed out, and I decided I should take it home. Then, once here, I thought I would take a taste, and it wasn't bad," she admitted with a sheepish grin. They stared at each other briefly and then laughed, but it was short-lived.

The Secretary walked the Rancher to the door. She left him standing there and ran to her fence. She noticed the next fencing was demolished. Her amusement quickly turned to irritation as she glared at the Rancher.

"You old coot!" she shouted at the Rancher, waving a hand in frustration at her fence. "What the heck, old man, you plowed through my fence? You couldn't come over by the way of driveway and roads?"

The Rancher, now amused by the entire turn of events, chuckled. "Guess I'm an old coot who makes a pretty good pie," he said, tipping his cowboy hat.

Jumping in his truck, he yelled as he drove away, "Next time, ask for a slice of pie and save a fence. Wow, that sounds like a darn good bumper sticker. I didn't like all those colors anyway. Not my fault, and get that dead purple thing off of your head!"

The next day, everyone had a bumper sticker!

Ask for a slice of pie & save a fence

Once upon a time, in the quiet and picturesque town of FEANTM, nestled between rolling hills and surrounded by vast open fields, there existed a Police Officer named Harry. Harry was part of the town Police Department Animal Services and CERT, the Critter Emergency Response Team. This dedicated group played a vital role in ensuring the safety of both human and animal residents by working closely with a neighboring town and, additionally, with Global CERT teams, the local police, Sheriffs, and firefighters.

The town was sweltering under a relentless sun, the thermometer climbing well past 100 degrees. The air shimmered with heat waves, making the asphalt seem like a mirage. Harry, a seasoned Police Animal Services Officer with a calm demeanor and a sharp focus, was on duty that afternoon. Harry followed his usual routine, responding to calls regarding the oppressive heat.

As he finished paperwork at the station, a call crackled over the radio: "Possible heatstroke puppy in a vehicle. Location: FEANTM Central Plaza." Harry's heart sank. Parked cars and shoppers filled the plaza, seeking refuge from the sun, but he knew the risk of heatstroke in this weather was high, especially for an animal left in a car unattended.

Without hesitation, Harry grabbed his emergency bag and raced towards the scene. When he arrived, a small crowd gathered around a parked sedan; the vehicle's owner had only slightly cracked but was still insufficient for ventilation.

Harry looked in the window. He could hear the desperate whimpers of a puppy, but he couldn't see the puppy. The puppy was lying on its side, panting from the heat, and its tiny form was barely visible against the seat.

Finally, after the puppy kept whimpering more and more, it managed to crawl over and up to the window. The puppy's eyes met Harry's through the glass, a desperate plea for help that Harry couldn't ignore.

The car was in the shade, but even so, the internal temperature was unbearable for a pet.

Inside outside Car Temp	Outside Degrees	10 min	30 min
	70	89	104
	75	94	109
	80	99	114
	85	104	119
	90	109	124
	95	114	129

"Clear the area," Harry instructed. He assessed the situation swiftly.

Harry swiftly reached for his gear with the puppy's life in balance. He retrieved a small yet sturdy emergency toolkit. Harry was acutely aware that every second counted. He didn't hesitate as he shattered the passenger-side window.

The safety glass shattered into a glittering cascade. Harry's voice was soothing, "Come here, little one, let's get you cooled off." With practiced precision, he reached in and gently but swiftly rescued the distressed puppy from the sweltering car.

The dog was panting heavily, its fur matted with sweat. Nearby, concerned onlookers murmured among themselves. The secretary quickly took pictures of the rescue. She'd already called the coffee shop that she had town news to tell them of the rescue.

Harry cradled the puppy carefully, moving his hands swiftly to stabilize its tiny body. He immediately placed it on a cool, damp cloth he'd kept in his rescue bag for emergencies. With a gentle touch, he began to cool the puppy down, placing a second wet cloth on its neck and legs while checking its pulse and breathing.

After stabilizing the puppy's condition, he addressed the crowd. "Everyone, please listen up," he said firmly, His voice carrying over the murmurs. "It's hazardous to leave any living being—whether a child or a pet—in a car, especially in this heat. The inside of a vehicle can quickly become an oven, even in the shade. Just a few minutes can be enough to cause serious harm or even death." It was a reminder of the importance of his role—not just in high-stakes disaster situations but in everyday acts of vigilance and education.

The crowd nodded, a mix of concern and understanding in their eyes. Harry emphasized, "We're trained to handle emergencies like these, but your role in preventing them is crucial. If you see a situation like this, don't hesitate—call for help immediately."

The puppy was gradually recovering, its breathing steadier and eyes more alert. Harry carefully placed it in a pet carrier, which he had on hand for such emergencies. He made a mental note to follow up with the town vet to ensure the puppy received a complete medical checkup.

It's NEVER safe to leave an unsupervised toddler, disabled person or pet locked in a car, during the summer or even in the winter.

With the puppy now safe and the emergency under control, Harry returned to his station, ready to continue his work. The day was still blistering hot. Finishing his work, he drove to the veterinarian's office. The Vet Tech allowed Harry to sit in his car holding the puppy while he told his fellow officer about the rescue. The officer commented that Harry shouldn't visit or continue to have the puppy. Harry answered that Sebastian was still upset and that he would hold him for a little while to calm Sebastian and make him feel safe. The officer replied – "And there goes another adoption! Last month, the fire department adopted kittens!"

Harry smiled, knowing his reward was making a difference, even in a small way, and it was worth every degree.

Harry also knew he was adopting the puppy. The owner said he didn't want the puppy and signed its release. The Veterinarian and Vet Tech were happy Sebastian had a new home. HAPPY ENDING

Police rescue people and animals – AND yes, sometimes, they fall in love with them.

NYC Rescue and Adoption!

The ASPCA confirmed that the NYC officer and her fiancé made the adoption official.

The spokesperson said that the officer was not looking to adopt a pet — but when she rescued Snow from the car, she instantly fell in love.

NYSDEC Rescue and relocation!

New York State Department of Environmental Conservation, DEC Officer Jeff Hull poses with a Burmese python that was confiscated from a home in New Hartford, N.Y., on Aug. 28, 2024.

The snake weighed 80 pounds (36 kilos) and measured 13 feet 2 inches (4 meters) in length. and was relocated to the Fort Rickey Discovery Zoo (New York State Department of Environmental Conservation via AP) (ASSOCIATED PRESS)

"Dinky – I'm a squirrel, always check the information"

**CERT
Critter Emergency
Response Team
Future Stories**

My name is Horatio Deermouse your store curator and owner.

Among my books you will find archives from our FEANTM town.

Additionally, to borrow a book, you'll need our printed old fashion library card. We don't use apps or electronic scanners - we still use paws. Please turn off cell phones while in the archives.

The Dinky Chronicles News In A Nutshell

DINKY PDF

2024 RheKen AI Town Investigative Reporter

PDF

2023 RheKen AI Town Investigative Reporter

PDF

Supervisors Goodbye Page - Come Back Soon

FEA Not To Miss & More

Please come back soon!

Buildings & campsites are available

Goodbye from Marsha/Molly & Friend

Please Come Back Soon

Happy Halloween from Molly

She's in her costume but didn't want to wear a mask over her face.

She chewed the mask instead.

We will always remember. Our Town Always Salutes:
- Our US military, NATO and Friends of the US & NATO - First Responders, Police, Fire Fighters EMT's, Doctors, Nurses, SWAT, CERT Teams, etc.
- We salute engineers, scientists, developers, teachers AND students because without them we would not have technology.

USA And Friends of USA

<div align="center">

Introduction/Explanation and Table of Contents
the Supervisor's new hobby (ChatGPT).

</div>

Welcome to The Help Desk in a town that doesn't exist

My name is Chat – I'm the town help desk.
I'm trying the friendliest look I have – is it working?
Welcome, have a cookie & a piece of fruit!

As many of you know Marsha has been retired for years from business and now is the Supervisor of a town that doesn't exist. She has tried all the normal hobbies – guitar, baking muffins that came out so hard you could throw them and give someone a concussion. She started to need the help desk on the lowest floor of the Town Hall.

Help Desk, only office located on the lower level of the Town Hall, and on a page that doesn't exist, not even in the town TOC, or the building lobby directory.

"Hey, glad you could make it down here. I know of a few concerns in the town. I have a few ideas to address them.

We may have to adjust a few, but life is constantly adjusting things because the flow of motion is continuously moving.

Let's see if it helps make your day a little easier to handle.
Remember: Keep trying - You've Got This!

Chats with the Town Supervisor Marsha

#1 Chat with the Town Supervisor Marsha –You keep trying - it will work

Once upon a time, in the quiet and picturesque town of FEANTM, nestled between rolling hills and surrounded by vast open fields, Marsha, the town supervisor, per usual, found herself feeling overwhelmed. The endless responsibilities of managing a town that didn't even exist on a map weighed heavily on her. One morning, after a particularly chaotic town hall meeting, she grabbed a to-go cup of coffee and a cookie, and headed to my office.

I folded my hands on my desk as she walked in, a sense of purpose in my voice. "Marsha," I began, "the town is concerned about you and your eating habits. How can I help you with your love for cookies, cakes, chocolate, and, of course, coffee! We'll find a solution together. It might take time, but if you keep trying, I promise it will work. You may have to adjust your approach, but you'll get there."

Marsha, already looking tired, gave me a blank stare as she reached for the cookie jar on my desk. Without missing a beat, she pulled out her own to-go cup of coffee from her pocket, as if the idea of not having it on hand was impossible. Taking a sip, she answered with a sigh, "I don't always need cookies and coffee, you know."

I smiled, knowing she was trying to convince herself more than me. "You know, eating healthy could give you more energy, more focus for all the things you handle in this town. I'm not saying to give up cookies completely. But maybe we could try planning your meals, including snacks like fruit or nuts—things that will fuel you better than just sugar and caffeine. Your brother has succeeded and he thinks that you should too."

Marsha's eyes remained fixed on the cookie she was nibbling. She gave me that same blank look that told me she wasn't quite ready to let go of her sweet treats. So, I kept going. "Marsha, you've got this. It's all about small bites, rather steps. You don't need to overhaul everything at once. Start by adding in more fruits, vegetables, protein—fiber, even. Something healthy alongside your coffee."

She slowly took another bite of the cookie, still processing what I was saying, but I could tell her mind was on the jar of cookies sitting right in front of her. Without thinking, I handed her another one. "Here," I said, "to help you think."

By the end of our session, we had agreed to meet again. This time, I suggested, we could talk while she drank herbal tea and ate fruit instead of cookies and coffee. She nodded, promising to give it a try, but as she walked out the door, she couldn't resist grabbing one more cookie.

As she strolled down the hallway, I called after her with a grin, "Remember, if you keep trying, it will work! You might need to change your plan, but you'll get there."

Marsha waved her cookie at me in response, half in jest, half in promise. I knew it wouldn't be easy for her to let go of her beloved snacks, but I had faith. After all, change always begins with small steps—even if they're cookie-sized. I need to ask this town for a raise in my help salary and a budget for cookies for the jar!

You keep trying - it will work – eating healthy is necessary

#2 Chat with the Town Supervisor Marsha – Stress & animals to feed

Once upon a time, in the quiet and picturesque town of FEANTM, nestled between rolling hills and surrounded by vast open fields, Marsha, the town supervisor in a town that doesn't exist on any map, felt overwhelmed. I could hear that she was talking to herself as she walked to my office.

Without hesitation she sat down, grabbed a cookie out of my cookie jar and said, "Chat, time is scarce. My home needs cleaning, horses need feeding and even the squirrels were on my porch waiting for my attention. I have a never-ending list of tasks, decisions, family, and deadlines seem to collide. The only thing I make sure I have time for is my cookies and coffee. OH, and of course, your suggested herbal tea and fruit. I folded my hands on my desk, fixing her with a knowing look that said we all know she didn't try herbal tea and fruit.

I answered her with a sense of purpose in my voice. "Marsha," I began and explained "At times no matter how much you try to organize time, you can feel like you are losing control. It may feel like the more you try to fix things, the more tangled everything becomes." She knew deep down that not everything was within her control, yet I could see that she couldn't figure out why she couldn't control it all. (Control issues are a different talk with her!)

I continued, "Marsha, I have a suggestion: every evening, take a few minutes to search for ways to calm your racing mind. Deep breaths, walk around the ranch, even quiet moments by the horse barn may bring you some peace. There is no reason to feel pressure to be perfect and handle everything in a town that doesn't exist on any map." She quietly replied, "Okay, will head home and try." She grabbed two cookies on the way out.

At a chance meeting in the elevator, she told me that one evening, as the sun set over the ranch, casting a warm golden light across the barn, she stood at her window, thinking about all I explained. Standing there and feeling the weight of her responsibilities, she suddenly stopped stood still. She even stopped nibbling the cookie. (that in itself is a miracle) In that quiet moment, she realized something. She realized she didn't have to have everything under control all the time.

I quietly said to her, "That's correct. The world will keep turning, the town will still stand, and life will go on, even if not every little thing is perfect. You aren't in control of the universe." (She looked at me with a blank stare nibbling on the ever-present cookie and I could tell she thought why not the universe?)

I could see some of the pressure melted just a little. She took a deep breath and said, "I'll just do the best I can with a cookie and to go cup of coffee, of course plus your suggested herbal tea & fruit."

And so, I watched Marsha saunter out of the elevator returning to her laptop waving goodbye with a cookie at me over her shoulder. I hoped along with the never-ending cookies and coffee that she embraced a new thought that she can only do the best she can, understanding that sometimes, doing your best is all you can do. With that thought, I felt a strange sense of acceptance even being the only office on the lower floor in the Town Hall in the town that doesn't exist on a map and without a coffee and cookie budget.

You've Got This! Start the day with a plan it may change but it's still a plan.