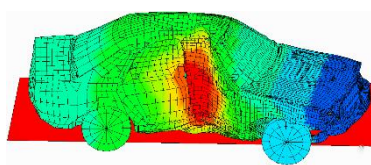


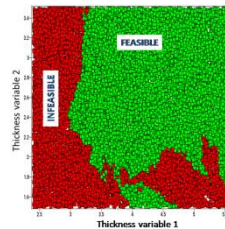
LS-OPT[®] New Release Version 6.0

LS-OPT Version 6.0 provides major new features as follows:

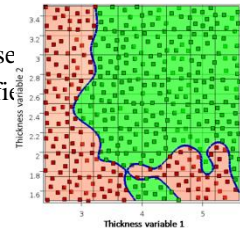
1. *Classifiers* have been introduced to provide a new constraint handling approach. In this method a decision boundary based on the pre-defined feasibility criteria is constructed in the design space that predicts whether a design is feasible or not (instead of predicting the response value itself). The support vector classification algorithm is available to approximate the boundaries. This approach is especially attractive for discontinuous or binary responses, and for handling multi-disciplinary failure/feasibility criteria.



Actual feasibility based on FE simulations

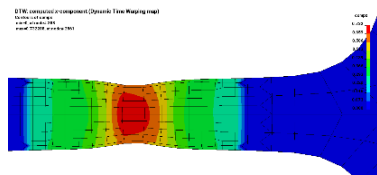


Feasibility base on classifier

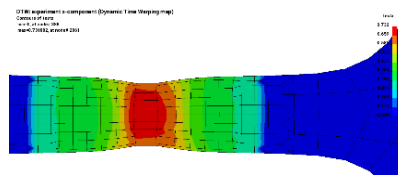


2. Parameter Estimation

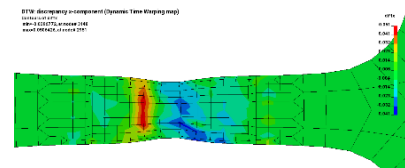
3. *Digital Image Correlation (DIC)*. Multi-point histories and crossplots (MPH) have been introduced to accommodate full-field spatial response. The MPH are defined at coordinates, e.g. from digital imaging. An interface is available for the gom/ARAMIS system and the GenEx parser has been extended for spatial data. Clustering methods and binary databases speedily handle high-volume DIC data. DIC data is mapped to the FE mesh and can be compared using LS-PrePost[®] selected from LS-OPT.



FEM (LS-DYNA[®])



DIC mapped to FE mesh



Difference (magnified)

4. *Similarity measures for curve comparison*. The Dynamic Time Warping (DTW) similarity measure has been added to compute the distance between any two multi-point curves for the purpose of parameter estimation. DTW addresses a deficiency to accommodate combined noise (e.g. failure models) and hysteresis.
5. *Interactive tables*. Simple static tables for design data have been enhanced to assume a more spreadsheet-like behavior. Tables, which interact with plots, now allow new design point generation in a selected region of interest as well as the simulation of newly generated points. The *point categories* feature has been enhanced while highlighting of infeasibility and interactive row sorting are possible.
6. *Stage library*. For standardization of a design problem setup, solver stages or process groups can be imported and exported to and from user-specified locations.

Efficient Global Optimization (EGO) has been added as an optimization strategy, *LS-TaSC* has been added as a solver option and the *Taguchi Method* is now available.



New version download:

<http://ftp.lstc.com/user/ls-opt/6.0.0>