

LS-OPT 4.2

Release notes for LS-OPT 4.2

The following new features are available in Version 4.2:

- The algorithm for constrained experimental design has been greatly improved. An optimization algorithm was introduced to locate design points within specified constraint bounds.
- LSTCVM has been added as a Secure Proxy Server for distributing solver jobs across a computer cluster. Running LS-OPT on a Windows machine controlling solver jobs on a Linux cluster is now possible.
- Individual jobs can be stopped using LSKILLJOB from the LS-OPT GUI. This feature has been implemented to kill lagging jobs which tend to hold up the entire optimization run. Accelerated job killing is provided as an option. A job can also be flagged for restart. LSTCVM and LSKILLJOB combined with LSCHEUDLER and other auxiliary programs provide a sophisticated job distribution system.
- More injury criteria are now available, namely MOC, NNIC, NIC, Nkm, LNLI, TTI and TI. A 3-node version of the injury criterion *Clip3m* has been added.
- Kinematics for NODOUT-based responses and histories. Includes the calculation of deformation and distance in global, local and local-in-reference-frame coordinate systems.
- DBFSI (fluid structure interaction) is available in the history and response interfaces.
- Curve Mapping has been added to improve the curve matching metric for material identification, especially for hysteretic curves, curves with steep sections and cases where only partial test data is available. A newly developed Partial Curve Mapping algorithm is used.
- Metamodel prediction accuracy based on PRESS error has been added as a stopping criterion for the Sequential Response Surface Method (SRSM).
- Automatic internal constraint scaling based on the constraint bounds has been added to the GUI. This feature ensures that constraint violations are treated equally irrespective of their magnitudes.
- The *Dominated Hypervolume* method as a stopping criterion for multi-objective optimization methods (GA). *Crowding Distance* and *Spread* of the Pareto Optimal Front can be monitored graphically.
- Self-Organizing Maps is available to visualize simulation results.
- Refinements have been made to the 2D Metamodel Cross-Section display by adding simulation points. The History display was improved by allowing the selection and display of multiple histories. There is stronger unification amongst the different types of displays.
- LS-OPT database archiving has been expanded to include extra files such as solver input files.
- Histories have been added to the GenEx (generic extraction) result extraction feature. In the past, only responses could be extracted.
- The input file environment can be used to store include files. LS-OPT will in this case automatically be able to parse and transmit the files (e.g. to a cluster).

For more details see release of LS-OPT Version 4.2: <http://www.lsoptsupport.com/news/release-of-ls-optae-version-4.2>