PRODUCT SHEET

ClearVu Solution Spaces™ (CVSS)

BeyondAnalytics

ClearVu
Solution Spaces™

Solution spaces for vehicle development

The robust design of communal vehicle components is a big challenge because of very different demands from engineering disciplines. Requirements concerning design, usability and performance are getting higher, and also official regulations such as vehicle emissions must be considered. Furthermore, the specific components are bound to characteristics like bending property and tension strength. ClearVu Solution Spaces (CVSS) enables you to systematically find a design that fulfills all restrictions and does not exceed any limit values. CVSS also provides clear visualizations of the solution spaces and other information.

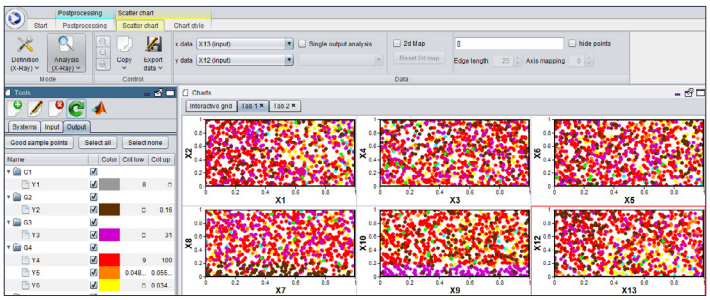

Fig. 1: The process starts with mostly invalid designs (red dots). With drag and drop you can move the black lines to narrow down and identify possible solution spaces.

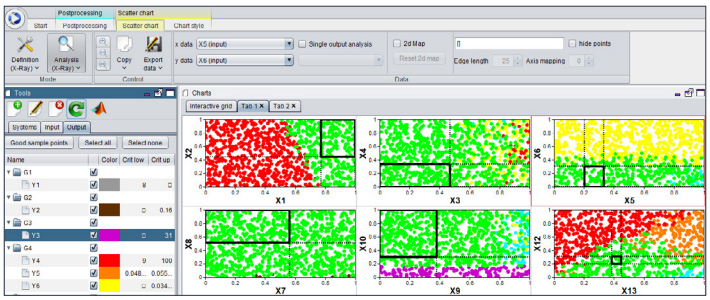

Fig. 2: After the solution space has been optimized, the valid solutions (green dots) are clearly recognizable.

The most important functions of CVSS

Interfaces to simulation programs simplify the import of the simulation results to CVSS. The generated solution space is automatically evaluated concerning the defined criteria and then optimized. Moreover, CVSS provides a manual adjustment of variables and their limit values, thus the definition of the solution space (Fig. 1 & 2). The variables are evaluated in scatter charts and the resulting solutions are marked with different colors. The aim is to get a solution space with feasible solutions only, marked by green dots.

Some of the analysis options of ClearVu Solution Spaces

+ How does the current design have to be adjusted?
+ Which requirements must be fulfilled by the single components to reach the desired result?
+ Are such components already available? If not, are very similar components available?
+ Which component for communal design construction can be used across multiple vehicle models?

The broad functionality includes

+ Open interface for simulators and Matlab for design evaluation.
+ Interfaces with response surface models for design evaluation.
+ Integration of the automatic generation of response surface models by ClearVu Analytics™.
+ Interactive and iterative identification and narrowing of solution spaces by means of the X-Ray tool.
+ Option for automatic optimization of solution spaces.
+ Wide range of options for visualizing solution spaces.
+ Flexible adjustment of all visualization aspects.

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