

Research Project

Computation of generalized solution spaces

Third-party funded project

Project title Computation of generalized solution spaces

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Organisation / Research unit

Departement Mathematik und Informatik / Computational Mathematics (Harbrecht)

Department

Project start 01.04.2015

Probable end 31.03.2018

Status Completed

This project is concerned with the computation of generalized solution spaces for arbitrary nonlinear, high-dimensional and noisy problems. The sought solution space should be of maximal volume and should contain only designs whose cost are below a given threshold. The solution space can thus be used to assess robustness or to identify relevant parameters for the improvement of an insufficient design.

Keywords solution space, high dimensions, noisy system, uncertainty

Financed by

Private Sector / Industry

Add publication

Published results

3643732, Graff, Lavinia; Harbrecht, Helmut; Zimmermann, Markus, On the computation of solution spaces in high dimensions, 1615-1488 ; 1615-147X, Structural and Multidisciplinary Optimization, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

2168455, Graff, Lavinia, A stochastic algorithm for the identification of solution spaces in high-dimensional design spaces, Publication: Thesis (Dissertationen, Habilitationen)

2397417, Fender, Johannes; Graff, L.; Harbrecht, H.; Zimmermann, Markus, Identifying key parameters for design improvement in high-dimensional systems with uncertainty, 1050-0472, Journal of mechanical design, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

4491678, Vogt, Marc Eric; Duddeck, Fabian; Harbrecht, Helmut; Stutz, Florian; Wahle, Martin; Zimmermann, Markus, Computing solution-compensation spaces using an enhanced Fourier-Motzkin algorithm, 1617-7061, Proceedings in applied mathematics and mechanics, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

4509277, Harbrecht, Helmut; Tröndle, Dennis; Zimmermann, Markus, A sampling-based optimization algorithm for solution spaces with pair-wise-coupled design variables, 1615-147X ; 1615-1488, Structural and multidisciplinary optimization, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

4641681, Tröndle, Dennis, Computation of generalized solution spaces, Publication: Thesis (Dissertationen, Habilitationen)

4626755, Harbrecht, Helmut; Tröndle, Dennis; Zimmermann, Markus, Approximating solution spaces as a product of polygons, 1615-147X, Structural and multidisciplinary optimization, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

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