

Call for Papers



Applications of Optimization in Engineering Design Automation (AppODA)

Mini-Symposium at EUROGEN
Sep 13-15, 2017, Madrid, Spain

Organizers

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Applications of Optimization in Engineering Design Automation (AppODA)

Based on a history of automating design calculations, simulation support, and applying artificial intelligence and optimization in engineering domains, **design automation** (DA) provides methods and tools for exploring solution spaces and generating designs at different levels of detail.

Optimization problems are often an inherent part of DA approaches and solutions since the complexity of products often yields optimization tasks which exceed the human capacity to solve them manually. In order to support the striving to fully explore the design envelope before making decisions with a high impact on committed costs, a wide range of industries has thus adopted optimization problems within engineering DA. Exemplary application areas include the validation and improvement of structural aspects and the appropriate selection, dimensioning and assembling of components to fulfil customer-specific needs. Beyond, also optimization methods to guide solution finding related to tasks with large and unstructured solution spaces have received increased attention.

This symposium aims at **bringing together practitioners and scientists from academia, research institutes and industry** to discuss about practical and scientific problems and solution strategies in the context of engineering design automation and optimization.

Topics of Interest

We welcome all **contributions with an industrial application or directed towards being applicable in industrial contexts** of optimization in engineering design automation.

Possible **approaches** include:

- Single- and multi-objective optimization methods (linear / nonlinear, trajectory-based / evolutionary algorithms)
- Simulation-based optimization including surrogate modelling
- Multi-disciplinary optimization
- Visualization of solution spaces and trade-off of solutions
- Optimization and interactivity
- Optimization under uncertainty
- Sensitivity analysis of optimization solutions
- Integration of optimization in DA
- Software platforms and IT infrastructures for supporting optimization in DA

Areas of application include, but are not limited to:

- Mechanical and plant engineering
- Aerospace
- Automotive
- Energy systems

Important dates

- **April 14, 2017** Deadline for **submission of extended abstracts** (4 to 8 pages) (**)
- June 2, 2017 Notification of acceptance
- July 8, 2017 Deadline for full paper submission (up to 15 pages)
- **Sept. 13-15, 2017** Conference/**Mini-Symposium**

Submission Details

(**) IMPORTANT: Please indicate in EasyChair (in the keywords field of your submission) that your extended abstract submission belongs to the "Applications of Optimization in Engineering Design Automation (AppODA)" mini-symposium.

Information on templates, submission page (**), quality requirements and review process:
<http://eurogen2017.etsiae.upm.es/eurogen2017/submissions/>

Publication

According to <http://eurogen2017.etsiae.upm.es/eurogen2017/publications/>, full papers will be published as follows

- best papers (based on a further review process by the Scientific Committee):
in a Springer ECCOMAS bookseries, Computational Methods in Applied Sciences, after the Conference
- all other full papers:
CD with ISBN number formatted in eBook form

The organizers of the mini-symposium „Applications of Optimization in Engineering Design Automation (AppODA)“ will seek to publish extended versions of excellent contributions in a relevant journal.

For complete and updated information, please check <http://eurogen2017.etsiae.upm.es/minisymposia/>.

We are looking forward to receiving your submissions and meeting you at EUROGEN in Madrid!

Kind regards,
The Organizers