Closing Remarks

3rd Optimization & Stochastic Days India 2013

September 23–24, 2013
Hotel Park Plaza, Bangalore
# 3rd Optimization & Stochastic Days

Workshop on Robust Design Optimization

September 23-24, 2013  
Park Plaza, Bangalore

## Agenda

### Day 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Registrations</td>
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<tr>
<td>9:50</td>
<td>Welcome by CADFEM</td>
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</table>
| 10:00 | **KEYNOTE: Robust Design Optimization — What? Why? How?**  
      | by Dr. Johannes Will, Dynardo GmbH                                      |
| 10:00 | Technology Update by Dr. Johannes Will, Dynardo GmbH                    |
| 10:50 | Coffee break                                                           |
| 11:30 | **Structural Borne Noise Optimization of Electric Power Steering Motor**  
      | using OptiSLang and ANSYS                                                
      | by Dattaprasanna Adbe and Vikas Jagdale, Brose India Automotive Systems Pvt. Ltd. |
| 12:05 | **Vehicle profile optimization to minimize threat to pedestrians**     
      | by Dr. Anoop Chawla & Hariharan Sankarasubramanian, Indian Institute of Technology Delhi |
| 12:40 | **Sensitivity Analysis & Multi-Disciplinary Optimization — Best Practices**  
      | by Dr. Johannes Will, Dynardo GmbH                                      |
| 13:25 | Lunch Break                                                            |
| 14.30 | **Training: Design Exploration, Parametric Optimization & Process Automation**  
      | Instructor(s): Karthik Chittepu (CADFEM) & Dr.-Ing Johannes Will (Dynardo) |
      | Topics covered (with several practical examples)                        |
      | 1) Design of Experiments/Sensitivity Analysis                           |
      | 2) Multi-Disciplinary/Multi-Objective Optimization                     |
      | 3) Integration with CAE Solvers                                       |
      | 4) Q&A Session — Discuss your own problems!                           |
| 17:30 | Closing remarks for the day                                            |
### Agenda

**Day 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Institution</th>
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<tbody>
<tr>
<td>9:30</td>
<td><em>Opening remarks for the day</em></td>
<td></td>
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</table>
| 9:40  | **Is Your Design Robust?**  
    How Reliable is my Design? Do I have a Six Sigma Design?  
    Model Uncertainties/Scatter into Simulations                                                                 |
|       | by Dr. Johannes Will, Dynardo GmbH                                                              |                                                             |
| 11:10 | *Coffee break*                                                                                  |                                                             |
| 11:45 | **Optimization of Laminated Composites – Overcoming Challenges in Design**                      | by Karthik Chittepu, CADFEM India                           |
| 12:20 | **Multi Objective Optimization Of Start Stop System Solenoid**                                   | by Sakthivadivel D, Robert Bosch Engineering & Business Solutions Ltd. |
| 12:55 | **Identification of Damage Parameters of an LS-Dyna Gurson Material Model**                      | by Karthik Chittepu, CADFEM India                           |
| 13:30 | *Lunch Break*                                                                                    |                                                             |
| 14:30 | **Training: Robustness Analysis, Robust Design Optimization & Reliability Analysis**             | Instructor(s): Karthik Chittepu (CADFEM) & Dr.-Ing Johannes Will (Dynardo) |
|       | Topics covered (with several practical examples)                                                  |                                                             |
|       | 1) Robustness Analysis, Robust Design Optimization                                               |                                                             |
|       | 2) Reliability Analysis                                                                            |                                                             |
|       | 3) Integration with CAE Solvers                                                                    |                                                             |
|       | 4) Q&A Session – Discuss your own problems!                                                       |                                                             |
| 17:30 | *Closing remarks for the day*                                                                    |                                                             |
**Summary**

**optiSLang** is an algorithmic toolbox for sensitivity analysis, optimization, robustness evaluation, reliability analysis and robust design optimization.

optiSLang is an CAE toolbox that has completed the necessary functionality of stochastic analysis to run real world industrial applications in CAE-based robust design optimizations.
Methodology

- Sensitivity analysis and optimization for large (number of variables) non-linear problems
- Optimization with robust defaults (ARSM, EA, GA, PARETO)
- Complete methodology suite to run robustness evaluation, reliability analysis and robust design optimization
- Compatible with any arbitrary solver (LS-Dyna, Abaqus, Nastran, Madymo, ANSYS, Radioss, Pam-Crash, CFX, Fluent, Star-CD, ...)

Key applications

- Model update and parameter identification using sensitivity study and optimization
- oS (+SOS) have completed the functionality for robustness evaluation and reliability analysis and robust design optimization to be used in production.

Industry standard

- Used by industry majors such as Daimler, BMW, Volkswagen, Robert Bosch, TRW, Rolls Royce, Siemens, ...
October 23-24, 2013
Snapshots
Park Plaza, Bangalore

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Workshop on Robust Design Optimization

Optimization & Stochastic Days
CAE: Robust Design Optimization Workshop

- Software for CAE-based Robust Design Optimization (RDO)
- Virtual prototyping
- Minimal effort to set up an RDO analysis
- Automatic identification of important parameters
- Multidisciplinary and multidisciplinary optimization
- Robustness evaluation
- Applicable also for a large number of parameters and non-linear RDO tasks
- Robustness solver runs
- Efficient model parameterization

(Credit: www.dynardo.de)
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Participation

16 attendees
13 organizations
3rd Optimization & Stochastic Days
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Participation

Park Plaza, Bangalore

5 industries

**Dynardo Library**
- Sensitivity & Optimization
- Parameter Identification
- Robustness & Reliability
- Robust Design Optimization
- Dynardo developments
- CMI Engineering & Geomechanics

**WOSD Library**
- Sensitivity & Optimization
- Parameter Identification
- Robustness & Reliability
- Robust Design Optimization
- Dynardo developments
- WOSD 8.0 topics (2011)

**WOSD International**

**Computational Analysis of Randomness in...**
It was wonderful to discuss your expectations/requirements!

We have noted your requests; we shall come back to your shortly with a reply!

The proceedings are planned to be shared via e-Mail on or before October 2, 2013.

Key contacts

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