Event Information

Venue

College De Valk – city campus KU Leuven

Tiensestraat 44, B-3000 Leuven, Belgium

Registration

http://www.b2match.eu/uncertainty-modelling

Free Partication

incl. coffee, lunch and walking dinner

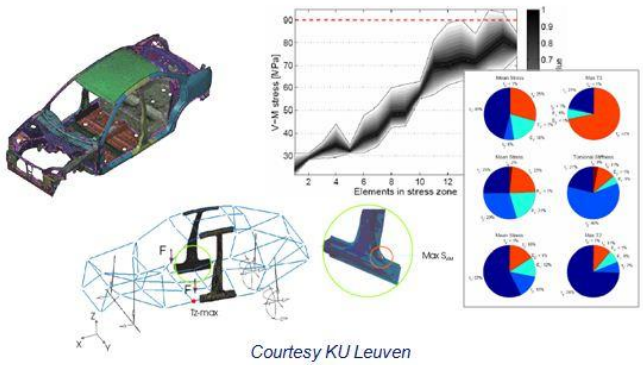
Contact

IWT – agency for Innovation by Science and Technology

Dirk Otte
T: +32 (0)2 432 4241
E: do@iwt.be

KU Leuven, PMA

David Moens
T: +32 (0)16 328 606
E: David.moens@mech.kuleuven.be

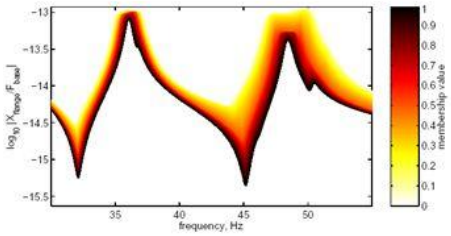


Courtesy KU Leuven

The Enterprise Europe Network is made up of 600 business and innovation support organisations in the EU and beyond. So it's well placed to help you find suppliers, distributors, trustworthy innovation partners and ways to source or sell technology. Expert advice and practical support from local experts, in your language, are just a phone call away.
http://www.enterprise-europe-network.ec.europa.eu/

Uncertainty modelling in engineering

Bridging research results and industrial challenges



International research2business and networking event

http://www.b2match.eu/uncertainty-modelling

Leuven (B), September 19, 2012

Why this event?

In many industrial sectors, modelling of products and processes is necessary to simulate their performance, all along the value chain, from concept design over production processes to operation and maintenance. Modelling techniques in engineering in principle are deterministic and provide unique predictions, that are based however on limited or uncertain information on the underlying modeling parameters, such as material properties, load conditions etc.

Including uncertainty explicitly in the model provides substantial added value to the insight in the predicted process. Non-deterministic approaches enable the modelling and simulation of uncertain or variable processes. They provide insight in "ranges" of possible behaviour rather than "unique" predictions, as well as insight on the relevance of the missing information.

The application in in engineering practice still is limited, although many non-determinisitc approaches have reached a high level of maturity. This workshop focuses on the added value of these techniques in engineering.

What to expect?

The events relies on two pillars:

Recent advances in non-deterministic modelling: Presentation and discussion on the results from the ***"Fuzzy Finite Elements"*** project. This Flemish strategic research project joins KU Leuven, University Ghent, imec, LMS International and SCIA Nemetschek, and is granted by IWT.

Bridging research results and industrial challenges: *Keynote* by **R. Platz** (Fraunhofer-Institut), *pitches* by renowned companies on industrial benchmarks, followed by *interactive parallel workshops* on the next steps towards industrial applications in the field of design and analysis, manufacturing and construction, operation and service

Courtesy KU Leuven

Event programme

09:30 Registration and welcome coffee

10:15 Opening (dr. Dirk Otte (IWT), dr. David Moens (KU Leuven)

Morning session; setting the scene

10:30 Technical session: overview of the IWT SBO project Fuzzy Finite Elements

- **prof. Stefan Vandewalle**, dept. of Computer Science, KU Leuven
- **prof. Gert de Cooman**, SYSTeMS Research Group, Ghent University
- **Dr. Laszlo Farkas**, LMS International
- **Ellen Simoen**, MSc, dept. of Civil Engineering, KU Leuven
- **Wim Verhaeghe**, MSc dept. of Mechanical Engineering, KU Leuven

Afternoon session: Industrial challenges, discussion and networking

13:45 Plenary session on industrial challenges in uncertainty modelling

- **keynote: Dr.-Ing. Roland Platz, Fraunhofer-Institut für Betriebsfestigkeit und Systemzuverlässigkeit,** LBF Darmstadt, Germany
- ***pitching session*** with speakers from Atlas Copco, Technum Tractebel Engineering, imec and LMS International.

15.15 Thematic discussions, guided by a moderator

In 2 times 3 parallel sessions, participants elaborate needs, opportunities and barriers to industrial applications, and exchange project and benchmark ideas.

- theme 1: Design & Analysis
- theme 2: Manufacturing & Construction
- theme 3: Operation & Service

18:00 Walking dinner

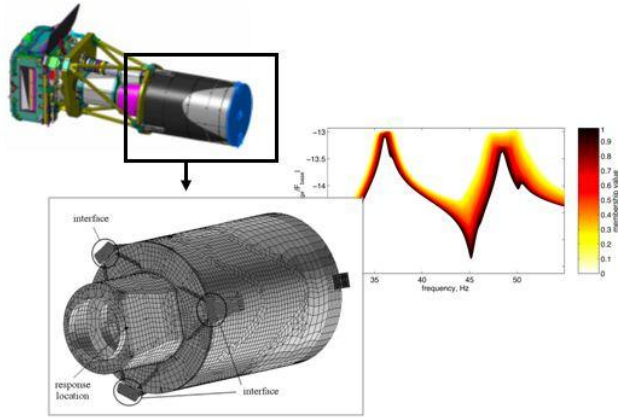
*This workshop is organised in conjunction with the **ISMA2012** Noise and Vibration Engineering Conference, and **USD2012** Uncertainty in Structural Dynamics Conference (www.isma-isaac.be), held in Leuven on 17-19 September 2012.*

*The course : "**Verification & Validation of Structural Dynamics Models**" will be organized on **September 20-21, 2012** in Leuven and is taught by dr. **F. Hemez** of Los Alamos Dynamics, L.L.C.*

Who should attend?

A variety of **industrial sectors** is addressed, ranging from **Automotive, Aerospace, Mechanical and Construction engineering**, ... up to Electronics and Agro-machinery.

- **engineering professionals** facing parameter uncertainty in any modelling or simulation process within their industrial practice, either in design, manufacturing or operational activities.
- **researchers** active in the field of non-deterministic modeling



Satellite telescope baffle
Courtesy of CSL (Pierre Rochus) – University Liège (B)

Why to participate?

- to learn about **latest research results** in uncertainty modelling
- to get inspired by specific **industrial cases and benchmarks**
- to present, discuss and develop **new project ideas** at international level
- to initiate **international contacts** and new industrial R&D&I projects

enterprise europe network
Business Support on Your Doorstep