Fourth International Workshop on

VALIDATION OF COMPUTATIONAL MECHANICS MODELS

5ᵀᴴ NOVEMBER 2019

GROSSER ZUNFTSAAL, ZUNFTHAUS ZUR ZIMMERLEUTEN, ZURICH

(GREAT HALL in the GUILD HOUSE OF CARPENTERS, ZURICH)

This event follows the successful international workshops on validation of computational mechanics models held in **Shanghai** (2011), **London** (2013) and **Munich** (2014). The workshop includes significant discussion periods on issues associated with establishing confidence and credibility in simulation results generated using computational models. The use of data – historical, experimental and simulated – in both design and decision-making will be addressed. Sessions and keynote speakers are:

CREDIBLE MODELS FOR ENGINEERING DECISION-MAKING
Keynote: Linden Harris, Airbus Operations
The assessment of smarter testing for credibility and maturity

VALIDATION OF MULTI-PHYSICS MODELS OF ENGINEERING SYSTEMS
Keynote: Anna Pandolfi, Politecnico di Milano
Validation of multi-physics models: from the material scale to the boundary value problem

THE FUTURE OF EXPERIMENTAL DATA FOR MODEL TRUSTWORTHINESS
Keynote: Yakov Ben-Haim, Technion
As our island of knowledge grows, so does the shore of our ignorance

Registration is free and a drink reception is included!

Please register by **Sep 30ᵗʰ2019** by email to erwin.hack@empa.ch
For further information visit the project website at www.engineeringvalidation.org

The workshop is funded by the EU H2020 project MOTIVATE.

MOTIVATE – Matrix Optimization for Testing by Interaction of Virtual And Test Environments

4th INTERNATIONAL WORKSHOP ON VALIDATION OF COMPUTATIONAL MECHANICS MODELS

Tuesday 5th November 2019 at the "Zunfthaus zur Zimmerleuten" (Guildhall of Carpenters), Zürich

PROGRAMME

09.30   Registration and Coffee

10.00   Introductory Remarks: Erwin Hack, Workshop Chair

SESSION ONE: Credible Models for Engineering Decision-Making
Chair: Erwin Hack, Empa

10.10   **Keynote**: *The assessment of smarter testing for credibility and maturity*
Linden Harris, Airbus Operations SAS, FR

10.50   *Validation and credibility challenges in applied biology and toxicology*
Maurice Whelan, JRC Ispra, IT

11.10   *Experimental detection and quantification of crack networks for numerical simulation in heterogeneous materials using techniques based on 3D digital images*
Yang Chen & James Marrow, University of Oxford, UK

11.30   Plenary Discussion. Panel: Linden Harris, Eann Patterson and Yang Chen

12.00   **LUNCH**

SESSION TWO: Validation of multi-physics models of engineering systems
Chair: Eann Patterson, University of Liverpool

13.20   **Keynote**: *Validation of multiphysics models: from the material scale to the boundary value problem*
Anna Pandolfi, Politecnico di Milano, IT

14.00   *Validation of fluid-structure interaction simulations*
George Lampeas, University of Patras, HE

14.20   *Model Validation in the UK Nuclear Industry: A Proposed Probabilistic Metric*
Steve Graham, National Nuclear Laboratory, UK

14.40   Plenary Discussion. Panel: Anna Pandolfi, George Lampeas and Steve Graham

15.00   **TEA BREAK**

SESSION THREE: *The Future of Experimental Data for Model Trustworthiness*
Chair: George Lampeas, University of Patras and Athena Research and Innovation Center, HE

15.20   **Keynote**: *As our Island of Knowledge Grows, so Does the Shore of our Ignorance*
Yakov Ben-Haim, Technion, IL

16.00   *Using Historical Measurement Data for Validation of Engineering Simulations*
Erwin Hack, Empa, CH

16.20   *Middle-ear mechanics and sound localization in the lizard: a finite-element approach*
Pieter Livens, University of Antwerp, BE

16.40   Plenary Discussion. Panel: Yakov Ben-Haim, Erwin Hack andPeter Livens

17.00   End of Sessions

17.15   **DRINK RECEPTION**