EU-US-Asia workshop on hybrid testing
The JRC is organising an international workshop on hybrid cyber-physical testing, possibly real-time and/or geographically-distributed.

It is a joint EU-USA initiative and the main objective is to bring together researchers from different geographic and academic backgrounds to present the recent scientific developments, discuss challenges, increase the broader knowledge and drive future collaborative research.

5 October 2015

Welcome

Welcome address [2] Artur Pinto, Joint Research Centre, European Commission

Shirley Dyke, Purdue University, US

Stability and accuracy of hybrid tests

Uncertainty propagation and global sensitivity analysis in hybrid simulation using polynomial chaos expansion [3] G. Abbiati, S. Marelli, B. Sudret & B. Stojadinovic, ETH Zurich, Switzerland; O.S. Bursi, University of Trento, Italy

Verification of different approaches in implementing hybrid simulation [4] S. Bousias, University of Patras, Greece


Hybrid simulation in seismic research. A major challenge and opportunity to ILEE Tongji University [7] W. Lu, Y. Wand, X. Ren & X. Lu, Tongji University, China

Minimising hybrid testing errors by optimal test rig design and control [8] A. Plummer, University of Bath, UK

Applications in earthquake engineering

Towards real-time hybrid testing of RC frames with masonry infills [9] A. A. Correia, A. Campos Costa & P. Candeias, National Laboratory for Civil Engineering, Portugal

F. Spencer Jr, University of Illinois, Urbana-Champaign, US


**Hybrid tests of a full-scale 2-story RC frame with buckling restrained braces** [12] K.-C. Tsai, A.-C. Wu & K.-J. Wang, National Taiwan University & National Center for Research on Earthquake Engineering, Taiwan

### Complexity of the numerical components in hybrid simulation

**Hybrid simulation of complex isolated bridges enhanced with parallel FETI time integrators and model updating** [13] G. Abbiati, ETH Zurich, Switzerland; O. S. Bursi, University of Trento, Italy; I. Lanese & A. Pavese, EUCENTRE, Italy

**Heterogeneous asynchronous time integrators for structural dynamics** [14] M. Brun, A. Gravouil & A. Combescure, Institut National des Sciences Appliquées, Lyon, France

**Connection between hybrid testing and standard shaking tests** [15] A. Le Maoult, Alternative Energies and Atomic Energy Commission, France

**Integration algorithms for hybrid simulation of structural response through collapse** [16] G. Mosqueda, UC San Diego, US

**Model updating in RTHS with highly nonlinear devices: experimental study** [17] G. Ou & S. Dyke, Purdue University, US


### Large-scale hybrid simulation

**Large-scale real-time hybrid simulations** [19] Y. Chae, Old Dominion University, US

**Hybrid testing of real-scale structures at ELSA** [20] F. J. Molina & P. Pegon, Joint Research Centre, European Commission


**Incremental hybrid simulation development method for large-scale application** [22] X. Shao, University of Western Michigan, US

### 6 October 2015

**Applications beyond earthquake engineering**

**A framework to support distributed testing and service integration in earthquake engineering**
Exploring the challenge of hybrid testing in city-scale experimentation [24] C. Taylor, University of Bristol, UK

Hybrid fire testing via the substructuring method [25] M. Korzen, BAM, Germany

Adaptive feedforward compensation for realtime hybrid testing with harmonic excitation [26] A. Bartl, Technische Universität München, Germany


Force-based hybrid simulation for expanding capabilities and applications to multi-hazards [29] N. Nakata, Clarkson University, US


Download all presentations [31]

Organising committee
A. Pinto, P. Pegon & G. Tsionis, Joint Research Centre
R. Christenson, University of Connecticut
S. Dyke, Purdue University

Contact
For further information please contact: Georgios Tsionis, georgios.tsionis@jrc.ec.europa.eu [32].

Participation to the workshop is by invitation only.

Source URL: https://ec.europa.eu/jrc/en/event/workshop/eu-us-asia-workshop-hybrid-testing

Links