

STS 28

Japan Session 2 – Computational Mechanics for Integrity of Industrial Infrastructures

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Session Abstract

Key words: *Elastic-Plastic Problems, Damage Mechanics, Advanced Particle Methods, Isogeometric Analysis, Computational Fracture/Damage Mechanics*

In the Special Technology Session (STS) “Computational mechanics for integrity of industrial infrastructures”, we discuss about the most advanced computational methods, which aim at the “integrity of “industrial infrastructures”. The industrial infrastructures include civil engineering structures such as bridges, buildings, highway and railroad structures, aircrafts, ships, power plants, manufacturing facilities, etc. The integrities of such structures are very important issues to assure our safe and sustainable society. The computational methodologies are the tools for us to maintain the integrities of industrial infrastructures. Typical computational mechanics related topics that will be covered in this STS include:

- Advanced Constitutive Models for Elastic-Plastic Problems and Damage Mechanics,
- Large Scale/High Performance computing,
- New Computational Methodologies, such as Advanced Particle Methods, Isogeometric Analysis, X-FEM, etc.,
- Computational Fracture/Damage Mechanics.

There will be five presentations, two presentations will be given by researchers from industries and the remaining ones will be delivered from researchers in academia.

List of paper titles and speakers:

Artificial Intelligence Simulation to Predict of Liver Lipid Levels

Ryuji Shioya, Toyo University, Japan, shioya@toyo.jp

Accurate Prediction of Spring-Back Phenomenon by Subloading Surface Model

Motoharu Tateishi, MSC Software Ltd., Japan, motoharu.tateishi@hexagon.com

CAE SaaS for Structural Integrity Analysis in Electric and Electronic Industry

Koki Tazoe, YATakeuchi Mitsuhide, Shinko Electric Industries, mi.takeuchi@shinko.co.jp

Shinji Nakazawa, Shinko Electric Industries

Hiroshi Okuda, The University of Tokyo, okuda@edu.k.u-tokyo.ac.jp

Observation and Analyses of Fatigue-Cracked Mechanical Structures in Industry

Koki Tazoe, YANMAR CO. LTD, Japan, koki_tazoe@yanmar.com

Genki Yagawa, Emeritus Professor, Univ. of Tokyo and Toyo University, Japan, yagawag@gmail.com

On Collaborative Computational Fracture Mechanics Research between the Academic and Industrial Sectors

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