

Joins Related Activities at IDETC2013

Dear colleagues,

We are excited to share with you these details regarding the activities related to joints research at IDETC2013. There are three different sets of activities that we would like to bring to your attention. First, the ASME Research Committee on the Mechanics of Jointed Structures will be having a general committee meeting on the Sunday afternoon at the start of the conference. We will also be having a planning meeting later in the week that all are welcome to attend. Second, we have a total of nine sessions in the Symposium on Jointed Structures, Contact, and Friction, which are divided into technical sessions and joint challenge sessions. The joint challenge sessions, in particular, focus on the challenges established at the Third International Workshop on Jointed Structures that was held following IDETC2012. The proceedings of the workshop will be available soon for those of you that are interested.

Committee Meetings

Sunday, August 4th, 4-7 pm, Room C123

This is our general committee meeting to discuss the outcomes of the 2012 workshop, the future directions of our research committee, current activities, and areas for new members to become involved in.

Tuesday, August 6th, 6-7 pm, Room C123

This shorter meeting will focus on the next mini-workshop and full workshop, and discuss how the joint challenge sessions are working and if they need to be modified in their format on Wednesday.

Technical Sessions

VIB 5-1: Jointed Structures and Assemblies, Monday, August 5th, 1:30 – 3:10 pm, Room B115.

VIB 5-2: Frictional Interfaces, Monday, August 5th, 3:30 – 5:10 pm, Room B115.

VIB 5-3: Model Reduction Techniques, Tuesday, August 6th, 8:30 – 10:10 am, Room B115.

VIB 5-4: Friction, Damping, and Energy Dissipation, Tuesday, August 6th, 1:45 – 3:25 pm, Room B115.

Joint Challenge Sessions

Each of the joint challenge sessions has a flexible structure. The goal of each session is to present the challenges assigned to it, give update presentations for those challenges, and to have a significant amount of time reserved for discussing the challenges.

VIB 5-5: Joint Challenges 1, Tuesday, August 6th, 3:45 – 5:25 pm, Room B115.

VIB 5-6: Joint Challenges 2, Wednesday, August 7th, 8:30 – 10:10 am, Room B115.

VIB 5-7: Joint Challenges 3, Wednesday, August 7th, 10:30 am – 12:10 pm, Room B115.

VIB 5-8: Joint Challenges 4, Wednesday, August 7th, 1:30 – 3:10 pm, Room B115.

VIB 5-9: Joint Challenges 5, Wednesday, August 7th, 3:30 – 5:10 pm, Room B115.

Technical Sessions at a Glance

VIB 5-1: Jointed Structures and Assemblies, Monday, August 5th, 1:30 – 3:10 pm, Room B115.

[DETC2013-12092](#) Dynamics of assembled structures: taking into account the surface defects in interfaces.
N. Peyret

[DETC2013-13185](#) Influence of Joint Parameters on Limit Cycle Amplitudes in Friction Induced Vibrations
M. Tiedemann

[DETC2013-13360](#) Bending vibrations of an assembly with measurement of local contact pressure
G. Chevallier

[DETC2013-13665](#) Vibration reduction of a machine tool carriage by an absorber with an adaptive joint connection
L. Gaul

VIB 5-2: Frictional Interfaces, Monday, August 5th, 3:30 – 5:10 pm, Room B115.

[DETC2013-12550](#) Dynamic Characteristics of Machine-Pile-Soil Vibration System with Interface Contact Friction Considered
X. Li

[DETC2013-12926](#) Wave-Based Analysis of Buckling in Columns and Frames
M. Leamy

[DETC2013-13003](#) Representing Shear Effects in the Contact of a Beam on a Rough Surface
D. Quinn

[DETC2013-13285](#) The Validity of the Statistical Description for a Mesoscopic Friction Model in Engineering Practice
B. Stingl

VIB 5-3: Model Reduction Techniques, Tuesday, August 6th, 8:30 – 10:10 am, Room B115.

[DETC2013-12752](#) Model Reduction for Nonlinear Structural Systems Using Balanced Realization Theory
A. Feri

[DETC2013-12971](#) Model Order Reduction of Assembled Structures for Dynamic Analysis
H. Festjens

[DETC2013-13346](#) Dynamic Substructuring for Systems with Nonlinear Interface Dynamics
P. Reuss

[DETC2013-13740](#) Multiharmonic Balance Analysis of a bolted friction oscillator
D. Süß

VIB 5-4: Friction, Damping, and Energy Dissipation, Tuesday, August 6th, 1:45 – 3:25 pm, Room B115.

[DETC2013-12823](#) The Difficulties of Modelling Damping in Linear Dynamic Systems
H. Goyder

[DETC2013-12826](#) Measurements of Damping due to Bolted Joints
H. Goyder

[DETC2013-13257](#) Application of Viscous and Iwan Modal Damping Models to Experimental Measurements from Bolted Structures
M. Allen

[DETC2013-13293](#) Strategies for Analyzing Random Vibration of Jointed Structures
D. Segalman

Joint Challenge Sessions at a Glance

VIB 5-5: Joint Challenges 1, Tuesday, August 6th, 3:45 – 5:25 pm, Room B115.

1. Roundup of the 3rd International Joints Workshop Outcomes
2. Round Robin/Benchmark Exercise for Hysteresis Measurements
3. Round Robin/Benchmark for Measurement/Prediction of Dissipation in Standard Joints

VIB 5-6: Joint Challenges 2, Wednesday, August 7th, 8:30 – 10:10 am, Room B115.

4. Methodology to Quantify Cost Benefits of Improved Joint Design
5. Define Mechanisms of Friction

VIB 5-7: Joint Challenges 3, Wednesday, August 7th, 10:30 am – 12:10 pm, Room B115.

6. Modeling Non-Metallics
7. Multiscale Modeling Framework

VIB 5-8: Joint Challenges 4, Wednesday, August 7th, 1:30 – 3:10 pm, Room B115.

8. Definition of Variability and Uncertainty (linked to the Round Robin Challenges, and how to model in the absence of experimental data)
9. Epistemic and Aleatoric Modeling

VIB 5-9: Joint Challenges 5, Wednesday, August 7th, 3:30 – 5:10 pm, Room B115.

10. The Derivation of Constitutive Equations Based on Physical Parameters (including measurement of spatial dependence of key physical parameters)
11. Eventual Implementation of Prediction Methods in Commercial Numerical Codes