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COMPUTATIONAL CONTACT MECHANICS

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ABSTRACT

Interfaces play a fundamental role in many engineering systems. Although a lot of progress has been achieved, the research field is still growing and diversifies in many directions This session is devoted to recent developments on the various aspects of contact mechanics:

- Interface behavior: unilateral contact, friction, adhesion, viscosity, fretting, wear, peeling, rolling contact, contact in biomechanics, fluid flow in contact interface
- Computational models: multilevel approaches (molecular and nano-mico-macro models), multi-physics (thermo, piezo, etc.), coupled multi-field formulations, fractal surface characterization, homogenization, bi-potential
- Computational methods: fast solvers, multi-grid, isogeometric analysis, NURBS, contact detection, third media contact
- Dynamics of structures and of rigid bodies, instabilities
- Mathematical progress
- Industrial applications involving interface and contact conditions.

Besides presentations of new results and new contributions to the understanding of contact mechanics, this session will provide an opportunity to discuss and exchange ideas on the various topics related to contact mechanics in science and engineering.

REFERENCES

[1] A. Popp and P. Wriggers (Eds.), *Contact Modeling for Solids and Particles*, CISM Courses and Lectures, vol. 585, Springer, Wien, 2018.

[2] M. Raous, *The Art of Modelling in Contact Mechanics*, in F. Pfeiffer, H. Bremer, (Eds.), CISM Courses and Lectures, vol. 570, Springer, Wien, 2017, 203-276.