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IGA FOR COUPLED PROBLEMS, INTERFACES AND CONTACT

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ABSTRACT

Many problems in science and technology are characterized by the interaction of multiple fields, multiple scales and/or multiple bodies. This can include thermal, electrical, chemical, and mechanical fields that interact across various time and length scales. Challenges arise in their theoretical and computational description, and from the fact that coupled problems generally are much more than the sum of their parts. The increased smoothness and accuracy of Isogeometric Analysis opens the door for improving the modeling, develop new formulations, and gain a deeper understanding of coupled problems, interfaces, and contact. Also, machine learning techniques can be expected to play an increasingly important role in their study.

This session aims at bringing together researchers working on these aspects and providing them with a forum for discussion. Possible topics to be discussed in this session are:

- Multifield & interface problems
- Multiscale problems
- Surface & edge effects
- Scaling
- Fluid-structure & soil-structure interaction
- Boundary layers
- Decohesion & fracture
- Contact, adhesion & friction
- Interfacial flows