TRIBOLOGY: A MULTISCALE AND MULTIPHYSIC PROBLEM

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ABSTRACT

Due to the need to better understand the phenomena involved in a friction contact, it is now necessary to be able to take into account models integrating various scales (system, roughness, etc.) and various physics (thermomechanics, dynamics, physico-chemistry, etc.). Thus, the difficulty lies in the predominance and multiplicity of couplings and in the evolution that must be integrated into the models.

More precisely, through this mini-symposium, the objective is to focus on friction problems, imperfect interfaces, whether geometric (roughness, etc.) and/or in the presence of heterogeneous materials on different scales.

In parallel and in order to be able to deal with these problems in a reasonable time, it is then essential to develop new efficient algorithms.

Thus, we would like to build on this mini-symposium to establish new interdisciplinary links between mechanics, modelers, mathematicians and computer scientists.

The topics covered include (but not limited to):

- Multi-physical couplings
- Multi-scale approaches
- Third body
- Theory, Modeling and Simulation
- Biotribology
- Wheel/Rail Contact
- Wear
- Friction Materials
- Surface Texturing