INVITED SESSION

Particle-lubrication across the scales

ORGANIZERS

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ABSTRACT

Friction between moving parts and the associated wear are estimated to be directly responsible for 25% of the world's energy consumption. Therefore reducing friction will have enormous economic, technological and societal impact. The use of granular materials or colloids between sliding counter-surfaces could allow to drastically reduce friction on several length scales and overcome the statistical roughness of real surfaces. In fact, particles could produce a dynamic network of very lubricant contacts that function as a macroscale lubrication system.

This session will enable a discussion of the latest advances in the theoretical understanding, the experimental evidence and the numerical simulation of the lubricant properties of granular materials and colloids.

The session is aligned with the EU-funded HORIZON-EIC-2021 “Scaling-up SuperLubricity into Persistence (SSLiP)”, // https://www.sslip.eu.