

Type of communication: Oral

Submitted by: PERSSON, Bo

IFF, FZ-Juelich

b.persson@fz-juelich.de

Fluid flow at the interface between solids with randomly rough surfaces

B.N.J. Persson

I discuss a theory of fluid flow at the interface between elastic solids with randomly rough surfaces. The theory is based on a recently developed contact mechanics model which accounts for the elastic deformations of the solids on all relevant length scales, and which holds accurately from small to full interfacial solid-solid contact. The theory is applied to fluid squeeze-out, the leak-rate of seals and to mixed lubrication. The theory results are compared to experimental data.