

Contact and system dynamics, transient components of SiMj

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The contact between surfaces in relative motion is a living and evaluating entity, subjected to transient boundary conditions and effected both by the macroscopic dynamic response of the system and the local dynamics at the interface. The transient contact solicitations give origins to more or less fast transient accommodation mechanisms. While the last decades allowed for focusing on the quasi-static accommodation mechanisms (shearing, plastic deformation, rolling, ...) at the different accommodation sites, a focus now is needed on the dynamic (faster) accommodation phenomena such as system vibrations (Hz-kHz), surface wave generation and propagation (kHz-MHz), third body dynamics (?). Such much faster phenomena can have a key role both in the quasi-static macroscopic frictional response of the system and the associated wear issues.