

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**Molecular dynamic simulations of the contact between elastic solids and fractal substrates** CARLOS E. CAMPANA, MARTIN H. MÜSER, University of Western Ontario — The contact mechanics and friction between unlubricated, elastic solids with fractal surfaces is studied using molecular dynamics. Large interfaces could be studied, owing to the use of elastic Green's functions for semi-infinite, elastic lattices. Our simulations confirm the emerging picture that friction and pressure distribution depend mainly on the mean slope of the walls in contacts (unlubricated and chemically passivated solids). Besides, the level of discreteness of the description plays an essential role. This supports another emerging picture, namely that the detailed structure of the very last layer is crucial for friction between two solids.

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Date submitted: 18 Nov 2005

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