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Nanomanipulation using only mechanical energy IVAN STICH, PETER DIESKA, CCMS, Slovak University of Technology (FEI STU), Ilkovicova 3, Bratislava, Slovak Republic, RUBEN PEREZ, Universidad Autonoma de Madrid, Madrid, Spain — We present the first computational study targeting the capability of dynamic surface force microscopy as a key tool for performing surface nanomanipulation, a possibility recently demonstrated also experimentally [1]. Using a very simple realistic model, an antisite defect on a III- V (110) surface, we show how the defect can be manipulated using exclusively mechanical energy of the oscillating tip. The atomistic details are elucidated and discussed in the context of the related experiments. Simultaneously, the study sheds light also on other key issues, such as chemical resolution and atomic resolution based on dissipation contrast formation. [1] N. Oyabu, et al., Phys. Rev. Lett. **90**, 176102 (2003).

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