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Theoretical simulation of non contact atomic force microscopy images of mica surface in water KATSUNORI TAGAMI, MASARU TSUKADA, Waseda University, Japan — Based on molecular dynamics simulations, the non-contact atomic force microscopy (nc-AFM) images are simulated of mica surface in water. The tip is modeled by the carbon nanotube apex and the temperature is assumed to be 300 K. The interatomic interactions used in the calculations are listed in CHARMM22 and CLAY force field models. The force curves show oscillatory behaviours near the surface and their amplitudes are found to significantly depend on the scanning points, which produces highly resolved images of the surface structure. In the talk we will make a presentation on the frequency shift dependence of the image contrast, discuss its origin, and compare it to the experimentally observed images.

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