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Steering induced growth anisotropy as a probe for long range interaction FRITS RABBERING, TEUN WARNAAR, HERBERT WORMEESTER, BENE POELSEMA, Solid State Physics, MESA+ Institute for Nanotechnology, University of Twente, Enschede, The Netherlands — Grazing incidence homo-epitaxy of 0.5 ML on Cu(001) leads to anisotropic structures as determined with high-resolution LEED. This is the result of attractive forces between the surface and the incoming particle. The trajectory of an incoming particle changes so dramatically that a large deposition flux enhancement on protruding structures results [1]. Trajectory calculations based on an attractive Lennard-Jones potential were combined with a kMC simulation that treats the surface diffusions processes in order to investigate the evolution of the observed anisotropy. Modifications of this potential at short range distances only slightly influence the anisotropy, while modifications at long range has a significant influence on the anisotropy as observed during sub-monolayer growth. This enables to probe the long range interaction. The experimental feasibility of the detailed probing will be discussed. [1] S. van Dijken, L.C. Jorritsma and B. Poelsema, Phys. Rev. Lett. 82 4038 (1999)

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