

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Growth instabilities at oblique incidence deposition; a detailed comparison between experiment and simulation BENE POELSEMA, FRITS RABBERING, University of Twente, HERBERT WORMEESTER — We report on a combined experimental and simulational study of super Poisson roughening at grazing incidence deposition of Cu on Cu(001). The experimental results have been obtained using high resolution electron diffraction. The Ehrlich-Schwoebel barrier and details of the long range attractive interaction potential, used in the simulation were obtained by comparison of calculations with experimental data. Using these data we obtain distinct similarities between simulation and experiments at temperatures and polar angles of incidence ranging from, respectively, 230-270 K and 40-85°. The formation of quite well ordered ripple patterns, oriented perpendicular to the plane of incidence, at initial coverages is followed by a rotation of the ripple patterns by 90° towards parallel to the incident plane for thicker films. Accurate incorporation of both interlayer mass transport and steering are key to this result.

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Date submitted: 02 Dec 2009

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