Mound slope and shape selection during unstable multilayer growth: Exact continuum formulation from a step dynamics model JIM EVANS, Iowa State University, MAOZHI LI, Iowa State University — Multilayer growth is unstable in the presence of a step-edge barrier which leads to the formation of mounds. Mound sides steepen at first, but then often attain a selected slope controlled by such processes as downward funneling. Atomistic modeling is very successful in describing such behavior [1], but continuum PDE formulations are often more efficient and instructive [2]. However, by analysis of a step-dynamics model for mound formation, we show that existing phenomenological PDEs fail to correctly predict mound slopes and shapes [3]. We coarse-grain the step-dynamics models to obtain a correct theory. [1] K.J. Caspersen et al. PRB 65 (2002) 194407; [2] M. Siegert, PRL 81 (1998) 5481; [3] M. Li and J.W. Evans, PRL in press.

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