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A Level-Set Approach to Simulate Mound Formation during Epitaxial Growth CHRISTIAN RATSCH, JOE PAPAC, UCLA, FREDERIC GIBOU, UCSB — We have developed an island dynamics model that uses the level-set approach to model epitaxial growth. In recent work we have implemented a numerical scheme to solve the diffusion equation for the adatom concentration with a (mixed) Robin boundary condition. Such a boundary condition properly describes multilayer growth when there is an additional step-edge barrier for atoms to diffuse over a step edge. We will discuss how variations of the boundary condition that correspond to variations of the step edge barrier affect the formation of mounds. We will furthermore discuss how the effect of downward funneling can be implemented within our approach and how it affects the slop of the mounds.

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