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**Parallel kinetic Monte Carlo simulations of island-coarsening in two dimensions**<sup>1</sup> F. SHI , Y. SHIM, J. G. AMAR, University of Toledo — The evaporation-driven coarsening of 2D islands is studied using a simple bond-counting model along with a recently developed semi-rigorous parallel algorithm for kinetic Monte Carlo (KMC) simulation. Using our parallel algorithm we have been able to simulate both larger system sizes and longer time scales than could be studied using serial KMC simulations. After deposition of less than a half monolayer on a substrate, the flux is stopped and the subsequent time evolution of the average island size and island size distributions were studied for different initial coverages. As expected, the average island size grows as  $t^{1/2}$  at intermediate time and approaches the asymptotic  $t^{2/3}$  behavior at very late time. Scaled island-size distributions in both regimes are obtained and compared with the predictions of mean-field theory. The efficiency of our parallel KMC simulations is also discussed.

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Prefer Oral Session  
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