Abstract Submitted
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Developments in Characterizing Capture Zone Distributions in Island Growth T.L. EINSTEIN[1], Physics & CMTC, Univ. Maryland, College Park, ALBERTO PIMPINELLI, Rice Quantum Institute, Rice Univ., DIEGO LUIS GONZÁLEZ, Univ. del Valle, Cali, Colombia, RAJESH SATHIYANARAYANAN, IBM Semiconductor R&D, Bangalore, India — The utility of using the distribution of capture zones (CZD) to characterize epitaxial growth continues to mount. For non-Poisson deposition (i.e. when island nucleation is not fully random) the areas of these Voronoi cells (proximity polygons) can be well described by the generalized Wigner distribution (GWD), particularly in the central region around the mean area. We discuss several recent applications to experimental systems, showing how this perspective leads to insights about the critical nucleus size. In contrast, several studies have shown that the GWD may not describe the numerical data from painstaking simulations in both tails. We discuss some refinements that have been proposed. Finally, we comment on applications to social phenomena such as area distributions of secondary administrative units (like counties) and of Voronoi cells around Metro stops.

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