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Erika B Roldan-Roa*, e.roldan.roa@gmail.com. *Topological and Geometric Analysis of Discrete Random Growth Models.*

Discrete Random Growth Models (DRGMs) are important models for the dynamical behavior of biological processes, and the interaction between the local and global properties of those systems. In previous work, we applied topological, combinatorial, and geometric techniques to the Eden Cell Growth Model, which is a DRGM process on the regular tessellation in the plane. Here, we extend this analysis to two-dimensional non-regular cell growth processes. Most significantly, we show that the asymptotic geometry and topology (measured in terms of the rank of the first homology group) of non-regular DRGMs are substantially different from that of the Eden Growth Model. This is joint work with Iancarlo Espinoza and Victor Perez-Abreu (CIMAT). (Received September 17, 2019)