NICOLAS LANCHIER, Department of Mathematics, Arizona State University, Tempe, AZ 85287 *Survival and coexistence in spatially explicit metapopulations*

Interacting particle systems are usually defined as Markov processes on a state space that maps the regular lattice into a finite set of colors, and whose dynamics are described by local interactions. We extend this framework by replacing the usual lattice with a connected graph whose topology dictates how particles interact. This approach allows us to define a version of the multitype contact process including two levels of interactions, ideally suited to model metapopulations. Our main result indicates that, in the presence of two spatial scales, two species living on different time scales may coexist, whereas it was conjectured by Neuhauser that this does not hold on the regular lattice. This suggests that both spatial scales provide two resources, which allows coexistence of two species.

This is a joint work with Lamia Belhadji.