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Patrick T Davis* (davis1pt@cmich.edu). *Modeling an Infectious Disease in a Continuous Region with an Embedded Metapopulation*. Preliminary report.

The dynamics of an infectious disease are typically modeled through the well-known compartmental framework, where the population is partitioned according to the stage of a disease; and when a population is spatially heterogeneous, the number of compartments is expanded to include the appropriate patchy or metapopulation structure. While such models may adequately describe the overall disease dynamics, they generalize the spatial domain as a series of nodes, thus failing to capture the full detail of the disease's spread. In this talk, we consider the spread of an infectious disease in a continuous spatial domain with an embedded metapopulation structure. (Received September 20, 2016)