SPATIALLY EXPLICIT MULTI-AGENT SIMULATION AND INDIVIDUAL-BASED MODELING IN NATURAL AND SOCIAL SYSTEMS

Multi-Agent Simulation is used to study systems in many disciplines including but not limited to ecology and biological sciences, economics, political science, and other social sciences. The principle in multi-agent simulation is emergent behavior, since the outcome emerges from the behaviors of the individuals known as agents, and is discovered over time using simulation. Agents are able to interact with their environment and with each other by processing local information, making decisions based on that information, and possibly changing the local environment. This talk will look at multi-agent simulation, drawing on applications from both social and biological sciences, with a particular emphasis to the spatial component: how agents exist in a spatial context, and how definitions of “local” are used. Some examples will be presented using NetLogo.

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