Dynamical pollination models (abstract)

Pollination is a complex biological phenomenon which may include many interacting plant and animal species. In such a case, and especially when we are interested in effects of spatial structure, it can be helpful to use some formal approach of study, as is dynamical modelling. This thesis describes common methods for pollination modelling in space.

The pollination can be divided into two consequent processes – pollinator movement and pollen carryover. Simple method of pollination movement modelling is using some random particle movement patterns, e.g. Brownian motion. This approach is useful mostly for systems with one plant species, or at large scales. More accurate, but difficult, posibility is modelling pollinators‘ movement through some decision making process based on their behaviour. Pollen carryover models are the necessary “translation” of pollinator movement to variables important for plants.

A part of this work is also an analysis of certain pollination models. Their assumptions, predictions and modifications for not yet tackled problems are discussed.