Dynamics of Structured Populations: Modelling and Analysis

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Abstract: In this talk I give an overview of the basic principles for modelling the dynamics of populations with a physiological and/or spatial structure. I show how modelling assumptions at the individual level translate into a model at the population level that take the form of a system of Volterra integral equations coupled with a system of delay-differential equations. I further present a functional analytic framework for analysing the model equations. In particular, the principle of linearized (in)stability can be proved within this framework.

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