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Modelling the HIV epidemic in Africa

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Abstract content
   (Max 300 words)

Epidemiological modelling frequently makes use of the modelling skills of physicists. An HIV epidemic microsimulation was developed in which the life-history of each individual in a population is tracked in the simulation. The population is initialised with demographic data, and marriages and short-term unions are formed and dissolved with a marriage market algorithm. HIV infection is introduced and spreads, simulating an epidemic, and the course of the infection is followed in each infected individual. In the model, social behaviour significantly affects HIV prevalence in the population, and this is investigated for 3 African populations with varying levels of risk. The model is not a direct application of mathematical structures found in physics, but rather an application of the general approach of a physicist when modelling a system of any kind.

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