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Social behavior and the spread of sexually transmitted diseases

Abstract:

In the study of the dynamics of sexually transmitted diseases, a population is usually subdivided into an active and relatively small core group and a weakly connected and largely inactive remainder, the non-core.

In the core group one finds high transmission rates and high disease prevalence. The core group is usually a reservoir for sexually transmitted disease and it has a crucial role in the spread of the disease.

The goal of the present work is to study the evolution of the core taking into account different social and epidemic scenarios. In particular, we analyze the dynamics of a continuous model that depends on a function that reproduces the people flow between the core and the non-core subpopulations.

Although it is expected that an outbreak of a dangerous pathogen will make the people more cautious, the way how it happens is difficult to determine. For this reason we keep this functions as general as possible in order to see what can be said in most of possible scenarios.

After that, we impose some restrictions to this function and we conclude some other particular results about the spread of the disease depending on some population parameters.

Date: Tuesday, October 29, 2013

Place: Room C1/028

Time: 12:00

