

Individuals mobility and measles

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ABSTRACT

In literature there are studies on measles that reveals the importance of mechanisms such as: seasonal forcing, stochastic amplification, external imports in disease free lands, when attempting to describe the dynamics observed in available datasets. Our aim is to study the relative importance of these mechanisms considering a gridded distribution of human population. We perform individual based simulations using the SIR epidemiological model. Individuals are allowed to commute between different grid units and their mobility is described by the radiation model [1]. The simulation results show that varying the level of mobility leads to multiannual, annual or biennial dynamics.

References

- [1] F. Simini, M. C. Gonzalez, A. Maritan and A.L. Barabasi (2012) *The radiation model: A universal model for human mobility and migration patterns*, Nature, Volume 484 (**96**) .