

Sensitivity study on a deterministic model of Zika disease transmission

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This work performs a local and global sensitivity analysis (see also [1], [3]) of a deterministic model introduced in [2] of Zika disease transmission that takes into account both mosquito-borne and sexual transmission modes. Human population is divided into six classes: susceptible, exposed, symptomatically infected, convalescent, asymptotically infected, and recovered, and the mosquito population is divided into three classes: susceptible, exposed, and infectious. The computational issues generate the sensitivity heat map from which one is able to effectively identify those observable variables that are sensitive to some parameter, and the parameter sensitivity spectrum that characterizes the sensitivity of these observable variables and the system as a whole with respect to each parameter.

References

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