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ON STOCHASTIC MODELS OF VECTOR BORNE DISEASES

Urszula Skwara

Maria Curie Skodowska University, Department of Mathematics, Lublin, Poland

uskwara@o2.pl

We describe how to analyse stochastic models of vector-borne diseases given by a system of stochastic differential equations. We study the long time-behaviour of the solutions and prove the asymptoptic stability of the system.

References

- [1] U. Skwara, F. Rocha, M. Aguiar, N. Stollenwerk. (2014). *On stochastic models of vector borne diseases*, Proceedings of 14th Conference on Computational and Mathematical Methods in Science and Engineering, CMMSE 2014 edited by Jesus Vigo Aguiar et al., Salamanca.
- [2] F. Rocha, L. Mateus, U. Skwara, M. Aguiar, and N. Stollenwerk. (2015). Understanding dengue fever dynamics: a study of seasonality in vector-borne disease models, Journal of Computer Mathematics, 93, 1405–1422, doi: 10.1080/00207160.2015.1050961.