Dynamics of biological systems: from viruses to populations

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Modelling disease ecology

Wednesday 23 September 2020 11:40 (30 minutes)

Here I will review my recent works [1] on modeling interacting contagious dynamics, for example coupled SIR or SIS dynamics, in mean field approximations and also on different random generated or empirical complex networks. I show and discuss how our recent results have been improving our understanding and prediction of epidemic dynamics and disease ecology while raising new questions and challenges in Dynamics of Biological Systems like diversity and population of viruses.

[1] Nature Physics 11, 936–940 (2015)
[2] Europhys. Lett. 104, 50001 (2013), PRE 93, 042316 (2016)
[3] New J. Phys. 19, 103041 (2017)
[4] Frontiers in Physics, V 5, P 46 (2017)
[5] Sci Rep. 9: 6463 (2019)
[6] Physica A, 518, Pages 50-70 (2019)
[7] PRE 100, 012307 (2019)
[8] PRE 100, 062308 (2019)
[9] Royal Society Open Science 7(1), 2054-5703 (2020)

[10] arXiv:2003.01268 (2020).

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