

HOW TO APPLY HYPERBOLIC RANDOM GRAPHS AND THEIR DYNAMICS TO THE SPREADING OF INFECTIOUS DISEASES?

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ABSTRACT. The global spread of covid-19 has triggered tremendous research efforts to gain a better understanding of infectious diseases, in particular their mathematical modelling. Indeed historically, mathematical reasoning helped, for instance, in the eradication of smallpox or the containment of malaria. Recently, random graphs and percolation have been used to model contact patterns in heterogeneous populations.

This talk aims to discuss the potential of hyperbolic random graphs and their dynamics for the understanding of infectious diseases. As a part of this, we will give an overview of previous modelling approaches and highlight some of the most significant insights.