Abstract Submitted
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Proximity Networks and Epidemics[1] HASAN GUCLU, Los Alamos National Laboratory, ZOLTÁN TOROCZKAI, University of Notre Dame — We presented the basis of a framework to account for the dynamics of contacts in epidemic processes, through the notion of dynamic proximity graphs. By varying the integration time-parameter T, which is the period of infectivity one can give a simple account for some of the differences in the observed contact networks for different diseases, such as smallpox, or AIDS. Our simplistic model also seems to shed some light on the shape of the degree distribution of the measured people-people contact network from the EPISIM data. We certainly do not claim that the simplistic graph integration model above is a good model for dynamic contact graphs. It only contains the essential ingredients for such processes to produce a qualitative agreement with some observations. We expect that further refinements and extensions to this picture, in particular deriving the link-probabilities in the dynamic proximity graph from more realistic contact dynamics should improve the agreement between models and data.

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