DSpace@IISERMohali (/jspui/)
/ **Publications of IISER Mohali (/jspui/handle/123456789/4)**
/ **Research Articles (/jspui/handle/123456789/9)**

Please use this identifier to cite or link to this item: `http://hdl.handle.net/123456789/2837`

Title:	Emergence of epidemics in rapidly varying networks
Authors:	Kohar, Vivek (/jspui/browse?type=author&value=Kohar%2C+Vivek) Sinha, Sudeshna (/jspui/browse?type=author&value=Sinha%2C+Sudeshna)
Keywords:	Simple model Connections Consequences
Issue Date:	2013
Publisher:	Elsevier
Citation:	Chaos, Solitons and Fractals,54, pp.127-134.
Abstract:	We describe a simple model mimicking disease spreading on a network with dynamically varying connections, and investigate the dynamical consequences of switching links in the network. Our central observation is that the disease cycles get more synchronized, indicating the onset of epidemics, as the underlying network changes more rapidly. This behavior is found for periodically switched links, as well as links that switch randomly in time. We find that the influence of changing links is more pronounced in networks where the nodes have lower degree, and the disease cycle has a longer infective stage. Further, when the switching of links is periodic we observe finer dynamical features, such as beating patterns in the emergent oscillations and resonant enhancement of synchronization, arising from the interplay between the time-scales of the connectivity changes and that of the epidemic outbreaks.
URI:	https://www.sciencedirect.com/science/article/pii/S0960077913001276 (https://www.sciencedirect.com/science/article/pii/S0960077913001276) http://hdl.handle.net/123456789/2837 (http://hdl.handle.net/123456789/2837)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need to add pdf.odt (/jspui/bitstream/123456789/2837/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/123456...

Show full item record (/jspui/handle/123456789/2837?mode=full)

📊 (/jspui/handle/123456789/2837/statistics)