

Accepted Manuscript

Observability transition in multiplex networks

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PII: S0378-4371(18)30231-0
DOI: <https://doi.org/10.1016/j.physa.2018.02.157>
Reference: PHYSYA 19277

To appear in: *Physica A*

Received date: 25 September 2017

Revised date: 17 November 2017

Please cite this article as: S. Osat, F. Radicchi, Observability transition in multiplex networks, *Physica A* (2018), <https://doi.org/10.1016/j.physa.2018.02.157>

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- 1 We extend the observability model from isolated to multilayer networks. The model finds its motivation in the study of dynamical processes where the state of the system can be determined by observing the states of a limited number of nodes in the system.
- 2 We study the emergence of the largest cluster of observed nodes as a function of the fraction of nodes directly observed in the model. In particular, we introduce a theoretical framework able to fully characterize the phase diagram of the observability model for arbitrary multilayer networks.
- 3 We perform a systematic analysis of several real-world multiplex networks. The results of our analysis emphasize that real systems should be often found in the observable regime regardless of the number of individual nodes that are directly observed.

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