



Donnerstag: 31.05.2018 16:00 s.t.

Zentrum für Bioinformatik, Bundesstraße 43, Raum 16

Bacterial gene regulation: The interdependent network of gene regulation and metabolism is robust where it needs to be

Recently, a framework for interdependent networks has emerged in the context of Statistical Physics. In a first quantitative application of this framework to Systems Biology, we study the interdependent network of gene regulation and metabolism for the model organism *Escherichia coli* in terms of a biologically motivated percolation model. Considering its response to perturbations that are localized with respect to functional criteria, we find the interdependent system to be sensitive to gene regulatory and protein-level perturbations, yet robust against metabolic changes. We expect this approach to be applicable to a range of other interdependent networks.

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Everyone is welcome!