From RNA-seq time series data to models of regulatory networks

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We will describe a novel approach to nonlinear dynamics based on topological and combinatorial ideas. An important consequence of this approach is that it is both computationally accessible and allows us to rigorously describe dynamics observable at a fixed scale over large sets of parameter values.

To demonstrate the value of this approach we will consider RNA-seq time series data time series data and propose potential regulatory networks based on how robustly the network is capable of reproducing the observed dynamics.