Network Dynamics Modeling and Analysis (NDMA): A flexible Python library for analysis of network dynamical systems

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We present a Python based framework for analyzing dynamical phenomena in network dynamical systems. This framework enables one to study a wide variety of models given only a network topology and activation functions as input. Examples of its capabilities include efficiently bounding, finding equilibria and isolating equilibria, finding saddle-node bifurcations, and Lagrangian optimization all in high dimensional parameter models. We demonstrate the library's capabilities with some examples from Systems Biology.

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