

**Maya Mincheva**

NORTHERN ILLINOIS UNIVERSITY

e-mail: mincheva@math.niu.edu

## **Oscillations in Biochemical Reaction Networks**

Understanding the dynamics of interactions in complex biochemical networks is an important problem in modern biology. Biochemical reaction networks are modeled by large nonlinear dynamical systems with many unknown kinetic parameters, which complicates their numerical analysis. Important properties, such as the potential of a biochemical reaction network to oscillate can be determined by the network's structure. We will discuss a new graph-theoretic condition which includes the negative cycle condition for oscillations as a special case.