

---

**BAASANSUREN JADAMBA**, Rochester Institute of Technology

*Minimization of a principal eigenvalue in a mixed dispersal model*

In this work, we study a mixed dispersal model of population dynamics and its corresponding linear eigenvalue problem. The model describes evolution of a population which disperses both locally and nonlocally. We investigate the minimization of the positive principal eigenvalue under the constraint that the resource function is bounded from above and below, and with a fixed total integral. The minimization problem is motivated by determination of optimal spatial arrangement of favorable and unfavorable regions for the species to die out more slowly or survive more easily. Numerical results are presented to show various scenarios. This is a joint work with Marina Chugunova, Chiu-Yen Kao, Christine Klymko, Evelyn Thomas and Bingyu Zhao.