1141-05-109   **Mahya Ghandehari*** (`mahya@udel.edu`), Department of Mathematical Sciences, University of Delaware, Newark, DE , and **Jeannette Janssen**. *A new parameter for seriation of nosey data.*

A square symmetric matrix is Robinsonian if entries in its rows and columns are non-decreasing when moving towards the diagonal. A Robinsonian matrix can be viewed as the affinity matrix between objects arranged in linear order, where objects closer together have higher affinity. Adjacency matrices of geometric graphs are special cases of Robinsonian matrices. In this talk, we introduce a new parameter, Γ_{max}, which recognizes Robinsonian matrices that are perturbed by noise. This parameter can therefore be a useful tool in the problem of seriation of noisy data. More precisely, we show that a matrix is Robinsonian exactly when its Γ_{max} attains zero, and a matrix with small Γ_{max} is close (in the normalized ℓ^1-norm) to a Robinsonian matrix. Moreover, we show that both Γ_{max} and the Robinsonian approximation can be computed in polynomial time.

This talk is based on a joint work with Jeannette Janssen. (Received July 22, 2018)