

1155-05-173

Daniel Irving Bernstein, Grigoriy Blekherman and Kisun Lee* (klee669@gatech.edu).

Typical ranks in real symmetric matrix completion.

In this talk, we consider the problem of low rank matrix completion for symmetric matrices. It is well known that the minimum rank of a completion of a generic partially specified symmetric matrix depends only on the location of the specified entries, and not their values, if complex entries are allowed. When we restrict ourselves to have only real entries, this is no longer the case and it has several minimum ranks which are called typical ranks. The Schur complement theory will be firstly discussed as a main tool. We give a combinatorial description of n -times n -symmetric matrices that have n as a typical rank. Moreover, we also characterize the patterns of entries with low maximal typical ranks. (Received January 11, 2020)