

1096-G5-2271 **T. S. Michael*** (tsm@usna.edu). *How to Rate Bridge Players and Other Paired Competitors.*

In the current rating system, individual duplicate bridge players accumulate points based on their performance over the course of their careers. Thus the ratings measure frequency of play and longevity as much as playing strength.

We propose a new method that rates players based on the performance of their partnerships. Our method uses a least squares scheme to account for the strengths of a player's partners and opponents. The computations involve solving a linear system, whose matrix is of mathematical interest: an unsigned Laplacian matrix. The same method can be used to rate individuals in doubles tennis or other sports where individuals compete in pairs.

This is joint work with Tom Quint and Jeff Mortensen. (Received September 17, 2013)