

1163-15-337

Charles R. Johnson* (crjohn@wm.edu). *Current Topics in the Nonnegative Inverse Eigenvalue Problem.*

As a practical matter, the very difficult Nonnegative Inverse Eigenvalue Problem has become a bundle of more particular problems. Time permitting, we report on two of these:

1) The doubly stochastic single eigenvalue problem asks which individual complex numbers occur as an eigenvalue of a doubly stochastic matrix. This problem, first discussed in the 1960's, remains open, though its row stochastic analog enjoyed its first "solution" about 70 years ago and has received refinements since. We report on the intriguing progress that is partly empirical.

2) Spectra with repeated eigenvalues may be nonnegatively realizable with some Jordan structures and not others. We sort out what is currently known and what is likely true about the Jordan NIEP.

The speaker's last talk at an AMS meeting on the NIEP was an hour talk about 35 years ago. (Received September 03, 2020)