Abstract

We will investigate the condition number, eigenvalue perturbations and
pseudospectrum of Toeplitz matrices under structured perturbations. Some-
times we will see few changes, sometimes, although provably rare, dramatic
differences in the structured and unstructured view. Connections to mini-
mization problems concerning polynomials are shown. One result is that the
structured distance to the nearest singular matrix equals the reciprocal of the
structured condition number, a nice generalization of the well known result
by Eckart and Young.