

On low rank perturbations of matrices

By *Lev Glebsky and Luis Manuel Rivera*.

The talk is devoted to different aspects of the question: “What can be done with a matrix by a low rank perturbation?” It is proved that one can change a geometrically simple spectrum drastically by a rank 1 perturbation, but the situation is quite different if one restricts oneself to normal matrices. Also the Jordan normal form of a perturbed matrix is discussed. It is proved that with respect to the distance $d(A, B) = \frac{\text{rank}(A-B)}{n}$ (here n is the size of the matrices) all almost unitary operators are near unitary.