Eigenvalues of large random matrices with non-iid enries

Abstract:

A classical result in Random Matrix Theory is that the eigenvalues of a random matrix with independent, identically distributed (iid) entries are uniformly distributed on a disk, as the size of the matrix goes to infinity. I will describe how the eigenvalues are distributed for matrices with independent entries but with different variances, with particular attention to the case when many of the entries are forced to be zero. I will then discuss generalizations of these results when the entries are also given a certain correlation structure.