Question: How to recognize true from apparent return-return correlations?

Answer (Wigner): Eigenvalue distribution of covariance matrix VERSUS that of a random distribution. 1000 TAQ stocks (hence 1000 eigenvalues)

Question: Which stocks dominate the eigenvectors corresponding to the 20 deviating eigenvalues?

truly random matrix (matrix whose entries are random numbers)

Laloux et al; Plerou et al [PRL & PRE]
Question: Which stocks dominate the eigenvector corresponding to a “deviating” eigenvalue?