



Large Dimensional Random Matrices: Some Models and Applications

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Large Dimensional Random Matrices have become important models in physics, finance, mathematics, statistics and information theory among other fields. An introduction to Wigner and Marchenko-Pastur laws will be presented, as well as developments inspired in these laws. Issues related to covariance matrix estimation when the number of variables $p \gg n$, the number of observations, will also be discussed. Applications to some problems in wireless communications will be highlighted. Recent results on the evolution on time and size of these matrices will be indicated.

Keywords: applications in physics and finance, covariance matrix estimation, Wigner and Marchenko-Pastur laws, wireless communications