

# On the mean Density of States of some matrices related to the beta ensembles and an application to the Toda lattice

*Tuesday, September 15, 2020 5:00 PM (30 minutes)*

In this talk we will introduce what we called  $\alpha$  ensembles, i.e. some random matrix models related to the classical  $\beta$  ensembles. In particular we will prove the convergence of their empirical spectral distributions to their mean densities of states and we compute them explicitly. As an application we explicitly compute the mean density of states of the Lax matrix of the Toda lattice with periodic boundary conditions with respect to the Gibbs ensemble. The talk is based on <https://arxiv.org/abs/2008.04604>

**Primary author:** MAZZUCA, Guido (SISSA)

**Presenter:** MAZZUCA, Guido (SISSA)

**Track Classification:** Scientific Programme