Authors’ abstract: We consider ensembles of real symmetric band matrices with entries drawn from an infinite sequence of exchangeable random variables, as far as the symmetry of the matrices permits. In general, the entries of the upper triangular parts of these matrices are correlated and no smallness or sparseness of these correlations is assumed. It is shown that the eigenvalue distribution measures still converge to a semicircle but with random scaling. We also investigate the asymptotic behavior of the corresponding l^2-operator norms. The key to our analysis is a generalization of a classic result by de Finetti that allows to represent the underlying probability spaces as averages of Wigner band ensembles with entries that are not necessarily centered. Some of our results appear to be new even for such Wigner band matrices.

Reviewer: Göran Högnäs (Åbo)

MSC:

60B20 Random matrices (probabilistic aspects)
60G09 Exchangeability for stochastic processes

Keywords: random matrix; exchangeability; Wigner band matrix; de Finetti matrix ensemble; random semicircle law; spectral norm

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References:


[18] W. Kirsch, Moments in Probability, book in preparation, to be published by DeGruyter. · Zbl 18.1076.02


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