

Buslaev, V.; Pastur, L.

A class of the multi-interval eigenvalue distributions of matrix models and related structures. (English) [Zbl 1041.81024](#)

Malyshev, V. A. (ed.) et al., Asymptotic combinatorics with application to mathematical physics. Proceedings of the NATO Advanced Study Institute, St. Petersburg, Russia, July 9–22, 2001. Dordrecht: Kluwer Academic Publishers (ISBN 1-4020-0792-2/hbk; 1-4020-0793-0/pbk). NATO Sci. Ser. II, Math. Phys. Chem. 77, 51-70 (2002).

Summary: For any integer $p \geq 1$ we present a class of polynomial potentials of matrix models for which the limiting density of eigenvalues can be found explicitly in elementary functions. The support of the density consists generically from p intervals. We introduce also certain p -periodic real symmetric Jacobi matrices and we give formulas relating the limiting eigenvalue density and the potential of the considered random matrix ensembles with the density of states and the Lyapunov exponent of these Jacobi matrices.

For the entire collection see [\[Zbl 1016.00018\]](#).

MSC:

- [81Q10](#) Selfadjoint operator theory in quantum theory, including spectral analysis
- [81R05](#) Finite-dimensional groups and algebras motivated by physics and their representations
- [81T10](#) Model quantum field theories
- [15B52](#) Random matrices (algebraic aspects)

Cited in 5 Documents