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Eigenvalue Statistics for Random CMV Matrices

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Abstract. CMV matrices are the unitary analogues of one-dimensional discrete Schrödinger operators. We consider CMV matrices with random coefficients and we study the statistical distribution of their eigenvalues. For slowly decreasing random coefficients, we show that the eigenvalues are distributed according to a Poisson process. For rapidly decreasing coefficients, the eigenvalues have rigid spacing (clock distribution). For a certain critical rate of decay we obtain the circular beta distribution. This work is joint with Rowan Killip.