

On positive Jacobi matrices with compact inverses

Grzegorz Świdorski (Wrocław University of Science and Technology, Wrocław, Poland)

We consider positive Jacobi matrices J with compact inverses and consequently with purely discrete spectra. If the inverse of J belongs to some Schatten class, we identify the asymptotic behaviour of the sequence of orthogonal polynomials and express it in terms of its regularized characteristic function. These general results are given a more explicit form in the case when $-J$ is a generator of a Birth–Death process. Then we provide a formula for the trace of the inverse of J . We illustrate our results by introducing and studying a modification of q -Laguerre polynomials corresponding to a determinate moment problem.

The talk is based on joint work with Pavel Šťovíček (Czech Technical University in Prague).