IST AUSTRIA
Institute of Science and Technology

Mathematics and CS Seminar

Formulas of Szegő's type for the periodic Schrödinger operator

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Host: Robert Seiringer

Szeg's limit theorem describes the asymptotic behaviour of Toeplitz determinants as the size of the Toeplitz matrix grows. The continuous analogue are trace asymptotics for Wiener-Hopf operators on intervals of growing length. These asymptotics are of particular interest when the symbol of the Wiener-Hopf operator has jump discontinuities: they can be used to compute the bipartite entanglement entropy of a free Fermi gas in its ground state. We look at the case that the corresponding one-particle Hamiltonian is a periodic Schrdinger operator (rather than the unperturbed Laplacian). In this context, we present a two-term asymptotic trace formula for the periodic Schrdinger operator in dimension 1. The subleading order of the asymptotics identifies the spectrum of the periodic Schrdinger operator. This is joint work with Alexander V. Sobolev.

Thursday, November 8, 2018 04:00pm - 06:00pm

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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