



2011 Mahler Lecturer

Peter Sarnak

Eugene Higgins Professor of Mathematics

Princeton University

and Professor, Institute of Advanced Studies

2 pm, Monday 15th August

Lecture Theatre S14, Building 29

Monash University Clayton

Zeros and nodal lines of modular forms

One of the consequences of the recent proof by Holowinski and Soundararajan of the holomorphic "Quantum Unique Ergodicity Conjecture" is that the zeros of classical holomorphic Hecke cuspforms become equidistributed as the weight of the form goes to infinity. We review this as well as some finer features (first discovered numerically) concerning the locations of the zeros as well as of the nodal lines of the analogous Maass forms. The latter behave like ovals of random real projective plane curves, a topic of independent interest.

The Mahler lectures are a biennial activity organised by the Australian Mathematical Society with the assistance of the Australian Mathematical Sciences Institute.

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