ESI Erwin Schrödinger International Institute
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Seminar

Prof. Giuseppe Mussardo

SISSA, Trieste

The Generalised Riemann Hypothesis

Monday, April 23, 2018

at 14:00 h

ESI, Boltzmann Lecture Hall

Abstract: In August 1859 the young and still little known Bernhard Riemann presented a paper to the Berlin Academic titled "On the number of primes less than a given quantity". In the middle of that paper, Riemann made a guess - remark or conjecture - on the zeros of analytic function which controls the growth of the primes. Mathematics has never been the same since.

The seminar presents the captive story behind this problem and discusses how the original conjecture can be extended to all Dirichlet functions, giving rise to the Generalised Riemann Hypothesis for the non-trivial zeros of all these functions. We show that the solution of the Generalised Riemann Hypothesis can be obtained employing ideas and methods which come from statistical physics, i.e. from the stochastic world of random walks and alike.

C. Dellago

April 17, 2018