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Institute of Science and Technology

Invitation to Seminar Talk

Anderson transition at 2 dimensional growth rate for the Anderson model on antitrees with normalized edge weights

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We consider the following graph: The graph vertices consist of countably many finite sets, $S_0, S_1, ...$ consisting of $s_0, s_1, ...$ elements where s_n is any sequence of positive integers.
We connect each point in S_n with each point in S_{n+1} and normalize the weight of the edge by $1/\sqrt{s_n s_{n+1}}$ and let A be the corresponding weighted adjacency operator.
The set S_0 can be considered as set of roots and S_n is the set of vertices of graph distance n.
Therefore, we say the graph has d-dimensional growth rate if $s_n \sim n^{d-1}$, and it has at least d-dimensional growth rate if $s_n>c n^{d-1}$. The d-dimensional growth is uniform if s_n / n^{d-1} has a positive limit as $n\to \infty$.
We consider the Anderson model given by $A+\lambda V$ where V is an i.i.d. compactly supported potential.
For small disorder, in a certain energy region the spectrum is purely absolutely continuous if the volume grow this at least d dimensional for $d>2$ and it is pure point if the volume growth is uniform d-dimensional for any $d<2$. At uniform 2-dimensional growth rate an energy region with singular continuous spectrum appears.
The special structure of the graph allows a description with transfer matrices, it can be seen as a hybrid between one and multi-dimensional graphs.

Thursday, 29 January 2015, 4:00pm

Mondi2, Central Building, 1st floor

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This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage (note that the IST Shuttle times are highlighted in dark green):
http://ist.ac.at/fileadmin/user_upload/pdfs/IST_shuttle_bus.pdf
The IST Shuttle bus is marked IST Shuttle and has the Institute Logo printed on the side.