

Dec. 14, Hoersaal 2, one of the bigger rooms in the first floor of UZA2

14:30 G. Mikhalkin, Geneva

15:30 Coffee

16:00 I. Itenberg, Paris

"Quantum enumeration of tropical curves"

Abstract:

Recently, Florian Block and Lothar Goettsche introduced new polynomial multiplicities for plane tropical curves. We show that these multiplicities give rise to a new invariant way to enumerate plane tropical curves. This enumeration can be interpreted as a certain refinement of Mikhalkin's tropical enumeration of complex curves and has applications concerning enumeration of real curves.

(Joint work with Grigory Mikhalkin.)

17:00 IRSES discussion

19:30 Wine and Cheese at Garnisongasse 3, 2nd floor

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Dec. 15, C 209, UZA4

09:00 Coffee

09:30 M. Polyak, Technion

„Knot and 3-manifold invariants via counting graphs and surfaces“

Abstract:

I will start with a short overview of the so-called perturbative invariants of links and 3-manifolds. While these invariants were intensively studied in the last two decades, many questions, inconsistencies and problems persist. The reason is that the construction is based on some complicated Feynman integrals (involving uni/trivalent graphs) in the perturbative Chern-Simons theory and a lot of technicalities are involved. In the main part of the talk I will describe an alternative elementary combinatorial construction of these invariants. It involves counting trivalent graphs in a link diagram. This approach immediately extends to invariants of 3-manifolds. Our construction can be restated in terms of counting certain surfaces ending on a link diagram. The latter description seems to be a combinatorial counterpart of a so-called "large N duality conjecture" by Gopakumar-Vafa, relating Chern-Simons theory to open strings.

10:45 H. Markwig, Saarbruecken

12:00 S. Galkin, Vienna

„Clusters and degenerations“