Mathematical Physics Seminar at Boston University

Thu, Nov 8th, 3:30pm

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Lattice point counting and ribbon graphs

MCS 180

Ribbon graphs appear in mathematics in two quite different ways. Firstly, as Feynman graphs they govern the perturbative expansion of Hermitian matrix integrals. Secondly, Penner showed that they label a cell decomposition of the moduli space of genus g curves with n marked points. Kontsevich calculated the volumes of these cells and showed that the sum of these volumes, in other words the volume of the moduli space, encodes intersection numbers on the moduli space of curves. Using his matrix model, Kontsevich proved recursion relations among these volumes to prove Witten's conjecture on intersection numbers. In this talk, I will describe a lattice point counting problem on the cells, which includes Kontsevich's volume plus finer information.

http://math.bu.edu/research/mathphys/seminar.html