Mathematics, Statistics, and Computer Science **@ UIC**

Geometry, Topology and Dynamics Seminar

Mathematics of Laughlin states

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Abstract: Laughlin state is an N-particle wave function, describing the fractional quantum Hall effect (FQHE). We define and construct Laughlin states on genus g Riemann surface, prove topological degeneracy and discuss adiabatic transport on the corresponding moduli spaces. Mathematically, the problems around Laughlin states involve subjects as asymptotics of Bergman kernels for higher powers of line bundle on a surface, large-N asymptotics of Coulomb gas-type integrals, vector bundles on moduli spaces.

Monday, April 1 at 3:00 PM in 636 SEO