

Massachusetts Institute of Technology
Department of Physics

Condensed Matter Theory Seminar

“Condensation and multi-layer fractional quantum Hall states”

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Abstract: We construct a series of fractional quantum Hall states that are the exact ground states of Hamiltonians with short-ranged two-body interactions and inter-layer pair tunneling terms. These states consist of multi-layer Moore-Read pfaffian states that are coupled via an overall Jastrow factor and form at filling fraction $\nu = 1$ for bosons. Using the general framework of condensate-induced transitions, we show that for an N -layer system the topological order of the state corresponds to $SO(N+2)_1$, while, based on numerical results for the bilayer case, we conjecture that the edge spectrum in general should reveal a $SO(N)_1 \times U(1)$ structure.

12:00noon
Wednesday, December 10, 2014
***Low Seminar Room (6C-333)**