Condensed Matter Theory Center Seminar

Monday, October 24
10:30am-11:30am
2205 Physics Building

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"How to find non-Abelian anyons?"

Abstract:
One of the most interesting features of the Quantum Hall effect (QHE) is the presence of quasiparticles whose charge is a fraction of electron charge and whose statistics is neither Bose nor Fermi. These quasiparticles are called anyons. The wave function of anyons accumulates a non-trivial phase when one anyon moves around others. In some QHE states, for example QHE state at filling factor 5/2, non-Abelian anyons are suspected to exist. Moving a non-Abelian anyon around others changes not only the phase but also the quantum state. This property makes a system of non-Abelian anyons a promising place for topological quantum computing. However, the existence of non-Abelian anyons in nature remains an open question. In this talk, I will present my graduate research on proposals to detect the 5/2 QHE liquid, including proposals to detect non-Abelian statistics, chirality of the QHE edge, etc.

All are welcome to attend.

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