



THE UNIVERSITY OF CHICAGO

COMPUTATIONAL AND APPLIED MATHEMATICS COLLOQUIUM

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Two-Dimensional Topological Insulators Beyond Periodic Structures

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Jones 226, 5747 South Ellis Avenue

ABSTRACT

In the simplest case, topological insulators are two-dimensional materials which support robust, one-way, edge currents. Despite recent progress on rigorously understanding edge currents through the "bulk-boundary correspondence" principle, basic practical questions about 2d materials, which are important for understanding topological insulators, remain to be answered. In this talk I will present (1) a new numerical method for computing edge states of 2d materials in the presence of edge defects, and (2) a new numerical method for computing Wannier functions of 2d materials which suggests a generalization of the "localization-topology" dichotomy to general disordered (without periodic structure) 2d materials.

Organizers:

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CAM Colloquium URL: <https://cam.uchicago.edu/seminars/colloq/index.shtml>.

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