"Topological phases of matter"
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Host: Vadim Oganesyan (CUNY-CSI)

Topological states of matter distinguish themselves from quantum ordered states - such as antiferromagnets - by the absence of a local order parameter. Their properties are remarkable, and range from realizing Majorana fermions to exhibiting fractional statistics and non-abelian braiding. Important for practical applications, topological states can exhibit perfectly conducting gapless surface or edge states traversing an otherwise insulating bulk gap. Some examples include topological insulators, topological superconductors, quantum spin liquids and the well-known fractional quantum Hall states. Recent experiments, have observed a wide array of the forementioned topological materials. I will discuss these states' unique properties, the theoretical challenges they present and new analytic and numerical methods (borrowed from quantum information) required to analyze them.

Time and date: 10:30 AM, Friday, Sept. 27, 2013 (+coffee beforehand)
Location: rm. 4102 (the Science Center), GC – CUNY, 365 5th Ave. NY
Online (live!): http://videostreaming.gc.cuny.edu/videos/channel/4/
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