

# Condensed Matter Theory Center Seminar



Wednesday, December 11 2013  
11:00 am to 12:00 pm, Physics Building 2205

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### “Wannier Function Based Approach to Topological Materials and Beyond ”

Possible non-trivial topologies of materials' band structures are now ubiquitous, and topological materials are predicted to host plenty of intriguing physical phenomena. Thus, the ability to identify the band structure topology (topological quantum numbers) from microscopic modelling becomes a useful part of materials simulations. In this talk I will focus on some particular examples of topologically non-trivial insulating phases, and show how special kind of Wannier functions can be utilized for computing corresponding topological quantum numbers. The surprising possibility to apply the presented numerical techniques for direct experimental measurement of topological invariants in the context of cold atoms will also be discussed.

(All are welcome to attend)

