

Massachusetts Institute of Technology  
Department of Physics

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**Condensed Matter Theory Seminar**

“Weyl Loop Semimetals - a new platform for condensed matter physics”

**Rahul Nandkishore**, University of Colorado - Boulder

**Abstract:** Weyl loop materials are three dimensional materials that host a closed loop of Dirac points. The fermi surface is a line (at Dirac filling), or a torus (away from Dirac filling). Additionally, there is a drumhead of surface states. This unusual band structure allows Weyl semimetals to exhibit an unexpected phenomenology upon turning on interactions and/or disorder. I discuss the unusual superconducting states (both bulk and surface) that are possible in Weyl loop materials. I also discuss the probable behavior of Weyl loop systems with Coulomb interactions and disorder.

**12:00pm**  
**Tuesday, May 2, 2017**  
**Duboc Room 4-331**

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Host: Michael Pretko