

KAVLI INSTITUTE FOR THEORETICAL PHYSICS

Presents

The Forty-Seventh KITP Public Lecture

Sponsored by Friends of KITP

Sean Hartnoll

From String Theory to Exotic Materials and Back Again

String theory subsumes established physical principles into a larger structure. A consequence of this enlarged perspective has been the discovery of unanticipated connections, or dualities, between previously unrelated physical phenomena. Most surprisingly, it has been found that the gravitational dynamics of black holes can be completely reformulated as that of an exotic many body state of matter without gravity. The states of matter that emerge have features in common with those that are believed to underlie the still ill-understood high temperature superconductors and other exotic materials. I will discuss some highlights from the rapidly developing two-way connection between black hole physics and materials with technological applications.

About the Speaker

SEAN HARTNOLL is an Assistant Professor in the Department of Physics at Stanford University. He completed his undergraduate and graduate work at the University of Cambridge, receiving his PhD from the Department of Applied Mathematics and Theoretical Physics. He was a postdoctoral fellow at the Kavli Institute for Theoretical Physics in Santa Barbara and subsequently at Harvard University.



Admission is Free
Seating is by RSVP only

at:

[http://www.kitp.ucsb.edu/
public-lecture-rsvp](http://www.kitp.ucsb.edu/public-lecture-rsvp)

or call

(805) 893-6349

by October 7, 2011

**Reserved seats are held
until 7:50 PM**

*To make special arrangements to
accommodate a disability, call the
KITP at the number above.*

LOT 10 PARKING

From the roundabout at Hwy 217, turn right onto Mesa Rd, merge into left lane, turn left at the first light into Lot 10 parking structure. **PARK, BUY a \$3 permit** from the dispenser (near the elevator and stairs), **DISPLAY PERMIT** on dashboard. The KITP is right next door.

*The KITP gratefully acknowledges its
many friends in the community.*

Wednesday, October 12, 2011
8:00 PM (reserved seats held until 7:50 PM)

Kavli Institute for Theoretical Physics, Main Seminar Room

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