KAVLI INSTITUTE FOR THEORETICAL PHYSICS

Presents

The Forty-Ninth KITP Public Lecture

Sponsored by Friends of KITP

Leo Kouwenhoven

Particle Physics On a Chip: the Search for Majorana Fermions

Majorana fermions were predicted in 1937 by Ettore Majorana in Rome. These are particles with the mysterious property that they are equal to their anti-particles. This defining property immediately implies that these 'Majoranas' have zero charge and zero energy. Ongoing searches for detecting Majoranas occur in the context of high-energy physics and dark matter, but yet without success. Simultaneously, condensed matter theorists proposed specially designed electronics that can host Majoranas. This insight led to a successful experiment that has the signature of a Majorana, potentially the key to developing a quantum computer.

About the Speaker

LEO KOUWENHOVEN is professor in physics at Delft University of Technology in the Netherlands. Kouwenhoven was a postdoc at UC-Berkeley (1992 and 1993) and later a visiting professor at Harvard for one year (2000/20001). Kouwenhoven specializes in quantum information science with the use of nanotechnology for realizing quantum bits in solid state electronic devices. Sponsored by Microsoft, Kouwenhoven's group has been searching for Majorana fermions in semiconductor nanowires. Their first report on Majoranas was published in Science (2012).

Seating is by RSVP only at:

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or call (805) 893-6371 by NOV. 30, 2012

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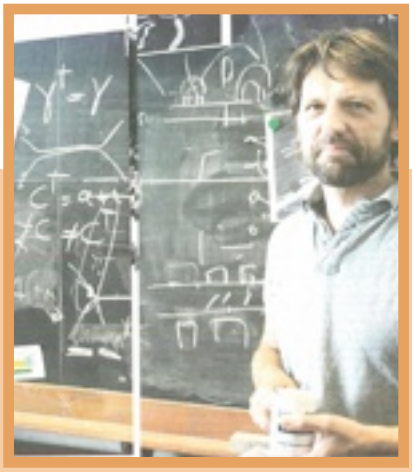
Admission is Free



Wed. December 5, 2012
8:00 PM

(Reserved seats held until 7:50PM)

Kavli Institute for Theoretical Physics

Kohn Hall,
Main Seminar Room

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