



Satyendra Nath Bose National Centre for Basic Sciences



Visitor, Associates and Students' Programme (VASP) presents Webinar Series on
Quantum Materials & Devices



10 NOV 2021

05:00 PM (IST)



Link



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TITLE

Planckian Metals and Black Holes

ABSTRACT

Many modern materials feature a "Planckian metal": a phase of electronic quantum matter without quasiparticle excitations, and relaxation in a time of order Planck's constant divided by the absolute temperature. The semiclassical theory of black holes predicts thermodynamic properties which are difficult to connect to a unitary quantum theory with a discrete spectrum. I will review recent progress in understanding these problems in very different fields of physics by using insights from the Sachdev-Ye-Kitaev model of many-particle quantum dynamics.

SPEAKER

Professor Subir Sachdev, Harvard University USA

Prof. Subir Sachdev is Herchel Smith Professor of Physics at Harvard University USA and a renowned condensed matter theorist. He is known for his theories on critical and topological states of quantum matter as well as for developing the SYK model which has provided a connection between condensed matter models and physics of black holes. His research interests include theory of quantum spin liquids, high temperature superconductors, and emulation of strongly correlated matter using ultracold atoms. He is awarded with many important prizes including LRoy Apker Award (1982), Sloan Fellowship(1989) Guggenheim Fellowship(2003) Dirac Medal (UNSW)(2015) Lars Onsager Prize(2018) and Dirac Medal (ICTP) (2018). He is also a honorary fellow of the Indian Academy of Sciences, foreign fellow of the Indian National Science Academy and elected member of the American Academy of Arts and Sciences.



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