



College of
Science
Department of Physics
& Astronomy

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Weekly Calendar

October 12 – 16, 2015

Hearne Eminent Lecture Series

“Black Holes in General Relativity”

5:00 PM Wednesday, October 14, 2015

Room 130 Nicholson Hall

Dr. Robert Wald

Enrico Fermi Institute, University of Chicago

Dr. Wald's research has been concerned with a broad range of topics in classical general relativity, cosmology, and quantum phenomena related to gravity. A great deal of his research has focus on the theory of black holes – regions of spacetime where gravity is so strong that nothing can escape – and the remarkable (mathematical and physical) analogy between the laws of black hole physics and the ordinary laws of thermodynamics. In particular, the fact that black holes radiate as perfect black bodies as a consequence of quantum particle creation effects has led to many deep insights into the nature of quantum gravity. His interests also span mathematical investigations of classical cosmology and astrophysics.

Departmental Colloquium

“Black Holes and Information Loss”

3:30 PM Thursday, October 15, 2015

109 Nicholson Hall

Robert Wald

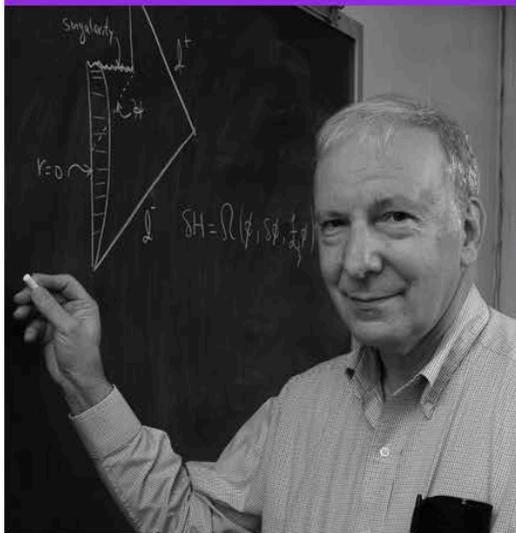
Enrico Fermi Institute, University of Chicago

HOST: Ivan Agullo and Parampreet Singh

During the past 45 years, a remarkable relationship has emerged between the theory of black holes in general relativity and the laws of thermodynamics. In particular, as a result of quantum particle creation, black holes emit thermal radiation at a finite temperature. This thermal radiation causes a black hole to lose mass in such a way that a perfectly isolated black hole will completely "evaporate" in a finite time. As a result of the entanglement of quantum fields inside and outside of a black hole, when the black hole evaporates, the final quantum state will be mixed even if the initial quantum state was pure, i.e., information will be lost. This colloquium will review black hole thermodynamics and the status of the information loss issue.



HEARNE EMINENT LECTURE SERIES



BLACK HOLES IN GENERAL RELATIVITY

A PUBLIC LECTURE BY
DR. ROBERT WALD,
THE UNIVERSITY OF CHICAGO

Dr. Robert Wald
Ph.D., Princeton, 1972.
Charles H. Swift Distinguished Service
Professor, Dept. of Physics, Enrico Fermi
Institute, and the University of Chicago.
Theoretical physics, general relativity.

**Wednesday
October 14,
5 p.m.
Room 130
Nicholson Hall**

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