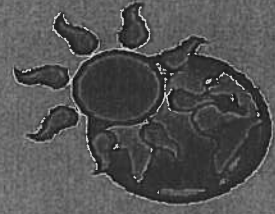


WEEKLY CALENDAR

Physics & Astronomy

202 Nicholson Hall



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October 4, 2004

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GENERAL SEMINAR

"Entanglement and Relativity"

Dr. Paul Alsing

University of New Mexico

Thursday, October 7, 2004, 3:40 PM in Room 109 Nicholson

Host: Dr. Jonathan P. Dowling

(Refreshments served at 3:15p.m. in Room 229 Nicholson)

Abstract

The new field of quantum information science is a vindication of Landauer's insistence that we recognize the physical basis of information storage, processing and communication. Recognizing that information science must be grounded in our understanding of the physical world, one is prompted to ask how relativistic considerations might impact quantum information processing tasks that rely on entangled states. In this talk I will discuss recent investigations into the effects of Lorentz transformations on entanglement, and the work I have been performing on the role of the Unruh effect in teleportation when one observer undergoes uniform acceleration. I will also give an intuitive explanation of the Unruh effect and how this leads one to consider an Unruh effect analogy experiment in a linear ion trap. The future goal of this research is towards an understanding of entanglement in curved spacetimes. Issues and future directions will be discussed.

Welcome To:

Dr. Carlos Palenzuela, a Postdoctoral Researcher with the General Relativity Theory Group.

Reminder

Faculty meeting will be held Tuesday, October 5, 2004 in Room 109 Nicholson Hall at 3:40 p.m.

Congratulations To:

Dr. Gabriela Gonzalez and Dr. Luis Lehner who were named Fellows of The Institute of Physics in recognition of their status in the Physics Community and their contributions to the Institute as members of an Editorial Board.

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