

PHYSICS COLLOQUIUM

Craig Hogan

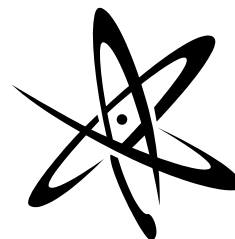
UW Physics

“Measuring Holographic Noise”

Monday, April 28, 2008

4:00 PM, Ronald Geballe Auditorium, Rm. A-102

Seminars



April 28-May 2, 2008

Abstract: A controversial but enduring idea in quantum gravity is that spacetime is "holographic", that is, a complete description of the world is possible on a 2D surface using fields with a Planck scale UV cutoff.

Some of the motivation for this conjecture, such as quantum unitarity of black hole evaporation, will be reviewed. An even more controversial phenomenological consequence of this idea is that world should be blurred in a particular way: there should be an indeterminacy of transverse relative position, associated with the information limits of a 2D system. The talk will show that this indeterminacy would lead to a new kind of "holographic noise" that should be detectable in some currently-operating interferometers, whose measured noise power spectral density is now of the order of the Planck time, depending on the design of the system. The spectrum in absolute units of the noise, as well as its spatial character, can be predicted with zero parameters, providing a direct and meaningful probe of quantum gravity.

Tuesday, April 29

Physics General Exam

10:30 AM, Rm. C-520, PAT

Matthew Dietrich, UW Physics

Condensed Matter Seminar

4:00 PM, Rm. C-421, PAT

Fei Zhou, UBC Physics

“Dynamical generation of fractionalized vortices and vortex lattices in rotating BECs”

Thursday, May 1

Astronomy Colloquium

4:00 PM, Rm. A-102, PAA

Sumner Starrfield, Arizona State University

“The RS Oph Outburst in 2006: A Hot Flash on a Degenerate Dwarf”

Friday, May 2

Particle Astrophysics Seminar

3:30 PM, Rm. A-110, PAA

M. Roth, UW Physics

“GLAST Pre-Launch Show”