

Department of Physics and Astronomy Presents

Dualities: Towards an understanding of Quantum Gravity



Pablo Diaz-Benito University of Lethbridge Thursday January 28th, 2016 1:40 pm, Room C620, U Hall

Abstract:

A theory of gravity is essentially a description of space and time. The classical picture of spacetime, which is nicely presented in the theory of General Relativity, is supposed to break down at Plank scale energies. At this scale, phenomena are supposed to be explained by a quantum theory of gravity. Unfortunately, Plank energy scale is far from reach at the lab nowadays. This, in turn, makes impossible to perform Quantum Gravity experiments. The lack of experimental feedback is, of course, a handicap of Quantum Gravity as compared to other quantum theories: Quantum Gravity must rely on mathematical consistency. Among the several available approaches to the subject, String Theory is probably the most solid and promising theory of Quantum Gravity. Computations in String Theory get very tough though. In this talk we will comment on some salient features of String Theory and how the arrival of dualities between String theory and conformal field theories open new ways of tackling Quantum Gravity computations.

EVERYONE IS WELCOME