Graduate Student Seminar in Mathematics

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1:00 p.m., HH-3017

Perturbation Theory in General Relativity

Abstract:

Einstein's theory of General Relativity is a model that describes gravitational systems. To make predictions with General Relativity one has to solve a set of coupled non-linear PDEs. Although solutions exist for physical scenarios with a high degree of symmetry, for e.g. black holes, in general the equations are hard to solve. To gain insight one then uses Perturbation Theory. In my talk I will explain how the Einstein's equations are linearized and, will describe an application of the Perturbation Theory to Schwarzshild Blackholes in 4 spacetime dimensions.