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A MINI COURSE ON SHOCK WAVE COLLISIONS IN D-DIMENSIONS

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Abstract

I will describe work on “Shock wave collisions” as a semi-analytical technique to understand the collision of two black holes, head-on, at very high speeds in D space-time dimensions. I shall describe a perturbative framework to obtain the radiated energy in gravitational waves and present a remarkable pattern for the inelasticity in terms of the space-time dimension, obtained in first order perturbation theory. Comments will be made about the applicability of perturbation theory, higher order corrections and comparisons with collisions of black holes and other compact objects in numerical relativity.

References:

<http://www.springerlink.com/content/t5812l42161255p2/?MUD=MP>

<http://prl.aps.org/abstract/PRL/v108/i18/e181102>

<http://arXiv.org/abs/arXiv:1206.5839>

<http://arXiv.org/abs/arXiv:1301.1073>

Date : Friday, April 4, 2014

Time: 10:00–12:00 and 14:00–16:00

Place: IMBM Seminar Room, Boğaziçi University South Campus