

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

Astronomy Seminar

July 19, 2010

Speaker : Dr. Daniele Malafarina
DAA-TIFR

Title : Black hole vs. Naked singularity formation
in gravitational collapse with pressure

Day, Date & Time : Tuesday, 20 July, 2010 at 16.00 hrs

Venue : Lecture Theatre (AG66)

(J.S.Yadav)

Abstract

We show that the occurrence of naked singularities as the end-state of the complete gravitational collapse of a spherical massive cloud of matter in the General Relativistic framework is a generic feature. Collapse models with tangential pressures are just as likely to form a naked singularity as a black hole and the introduction of such pressures can 'undress' an otherwise covered singularity. As an example we show how perturbing the Oppenheimer-Snyder dust collapse model with a small tangential pressure can lead to the formation of a naked singularity.