Abstract

In the present work we examine the nature of central singularity forming in the higher dimensional spherically symmetric collapse of dust cloud and it is shown that this is always a strong naked singularity where gravitational tidal forces diverge powerfully. An important consequence is that the nature of the naked singularity forming in the dust collapse turns out to be stable against the perturbations in dimension of the spacetime. Thus we have shown that the higher dimensional gravitational collapse of dust violates the cosmic censorship conjecture.
Nakedness and Curvature Strength of Singularities arising in the Higher-Dimensional Spacetimes

References

- S. G. Ghosh and Beesham, Naked singularities in higher dimensional inhomogeneous dust collapse, Class. Quantum Grav. 17, 4959 (2000).

Index Terms

Computer Science          Applied Mathematics

Keywords

Gravitational Collapse  Naked Singularity  Block Hole  Cosmic Censorship  Hypothesis