SINGULARITY IN HIGHER DIMENSIONAL SPACETIMES

Makoto Narita

Department of Integrated Arts and Science, Okinawa National College of Technology

We study global existence problems and asymptotic behavior of higher-dimensional inhomogeneous spacetimes with a compact Cauchy surface. The Einstein equations in some suitable time coordinate are reduced to a wave map system, and a global existence theorem for the system is shown. Finally, we show existence theorems of asymptotically velocity-terms dominated singularities by using Second-order Fuchsian technique developed by Beyer and LeFloch.