ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

5. Differential Geometry and Global Analysis

1991 MS Classification: 53C50 83C75
Beem, John K., University of Missouri-Columbia, USA and Królak, Andrzej, Max-Planck-Institute for Gravitational Physics, Germany and Polish Academy of Sciences, Poland
Cauchy Horizon Endpoints and Differentiability
Cauchy horizon are boundaries of future Cauchy developments of close sets. Cauchy horizons are shown to be differentiable at endpoints where only a single null generator leaves the horizon. A Cauchy horizon fails to have any null generator endpoints on a given open subset iff it is differentiable on the open subset and also iff the horizon is (at least) of class C^1 on the open subset. Given the null convergence condition, a compact horizon which is of class C^2 almost everywhere has no endpoints and is (at least) of class C^1 at all points.
Reference: J. K. Beem and A. Królak, Cauchy Horizon Endpoints and Differentiability, submitted to Journal of Mathematical Physics.