

Title: Singularity formation in black hole interiors: Polarized perturbations of Schwarzschild

Abstract: We consider the stability of the Schwarzschild singularity in vacuum under polarized and axially symmetric perturbations.

We find that the space-like singularities persist under such perturbations, but their dynamics exhibit a great richness, consistent with the asymptotically velocity term dominated behaviour.

The result relies crucially on a new approach for the Einstein equations in axial symmetry. Some comparisons with known and predicted results for cosmological space-times will also be made.

Joint work with G. Fournodavlos.