## Miguel Zilhao
Centro de Fisica do Porto, Universidade do Porto

### Dynamics of black holes in de Sitter spacetimes

Authors: M. Zilhão, V. Cardoso, L. Gualtieri, C. Herdeiro, U. Sperhake, and H. Witek

We report on the first dynamical evolutions of black holes in asymptotically de Sitter spacetimes. We focus on the head-on collision of equal mass binaries and compare analytical and perturbative methods with full blown nonlinear simulations. Our results include an accurate determination of the merger/scatter transition (consequence of an expanding background) for small mass binaries and a test of the Cosmic Censorship conjecture, for large mass binaries. We observe that, even starting from small separations, black holes in large mass binaries eventually lose causal contact, in agreement with the conjecture.