

Prof. Vitor Cardoso

Instituto Superior Técnico (IST), Universidade de Lisboa, Portugal

Black holes: the last frontier

One of the most remarkable possibilities of General Relativity concerns gravitational collapse to black holes, leaving behind a geometry with light rings, ergoregions and horizons. These peculiarities are responsible for uniqueness properties and energy extraction mechanisms that turn black holes into ideal laboratories of strong gravity, of particle physics (yes!) and of possible quantum-gravity effects.

I will review the status of black holes, in light of gravitational-wave and electromagnetic observations in the last few years.