

# Black holes as cosmic accelerators

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The origin of ultra high energy cosmic rays remains a mystery. It represents the challenge of finding the nature of the most powerful particle accelerators in the Universe, which exhibit collisions with center of mass energies about 100 times those attainable at the LHC. During their acceleration process, they produce high energy gamma-rays and neutrinos. These secondary messengers reveal clues about the extreme environments around stellar or supermassive black holes. I will present models of the powerful cosmic engines associated with black holes and review the possible sources candidates in light of some recent developments in Multimessenger Astrophysics.

**Primary author:** Dr GLOBUS, Noemie

**Presenter:** Dr GLOBUS, Noemie

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