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Limits on primordial black hole evaporation from H.E.S.S. observations.

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Primordial Black Holes are expected to be formed in the early Universe by the gravitational collapse of over-dense regions, among other mechanism. They are also expected to loose their mass over time by the Hawking radiation process. As the rates of this radiation increase with temperature, the PBH evaporation should result in a violent explosion.
The current upper limits on explosion rates are on the order of $10^4 - 10^5 pc^{-3} yr^{-1}$.
In this contribution we'll present the results of a search for TeV γ-ray burst within timescale of few seconds, using nearly 5000 hours of H.E.S.S. data. The search algorithm and statistical estimation strategy will be presented as well as cosmological implications of this measurement.

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Collaboration

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Subcategory

Experimental Results

Primary authors: GLICENSTEIN, Jean-Francois (IRFU-CEA Paris-Saclay); BRUN, Francois (CEA-Irfu); Dr TAVERNIER, Thomas (IRFU, CEA Paris-Saclay); Dr MARANDON, Vincent (MPIK Heidelberg); FOR THE H.E.S.S. COLLABORATION

Presenter: Dr TAVERNIER, Thomas (IRFU, CEA Paris-Saclay)

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