

## Phenomenology 2025 Symposium



Contribution ID: 177

Type: **not specified**

# Could We Observe an Exploding Black Hole in the Near Future?

*Monday 19 May 2025 15:30 (15 minutes)*

The observation of an exploding black hole would provide the first direct evidence of primordial black holes, the first direct evidence of Hawking radiation, and definitive information on the particles present in nature. However, indirect constraints suggest that direct observation of an exploding Schwarzschild black hole is implausible. We introduce a dark-QED toy model consisting of a dark photon and a heavy dark electron. In this scenario a population of light primordial black holes charged under the dark  $U(1)$  symmetry can become quasi-extremal, so they survive much longer than if they were uncharged, before discharging and exhibiting a Schwarzschild-like final explosion. Addressing the question posed in the title, we find the answer to be “yes”.

## Mini Symposia (Invited Talks Only)

## Plenary (Invited talks only)

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**Session Classification:** Astro-particle

**Track Classification:** Astro-Particle Physics