

## Optical Microlensing by Primordial Black Holes with IACTs

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### What is this contribution about?

This contribution investigates the possibility of Imaging Air Cherenkov Telescopes (IACTs) to detect microlensing of primordial black holes (PBHs) in the currently unconstrained mass range of  $M_{\text{PBH}} < 10^{-10} M_{\odot}$ .

### Why is it relevant / interesting?

PBHs are a possible dark matter candidate. Microlensing is a powerful method to constrain the PBH abundance but for low PBH masses usually limited by the sampling speed of the instruments. IACTs are powerful optical telescopes for very short transient optical astronomy ( $\ll 1$  s) which might allow to extend the microlensing PBH limits to lower masses.

### What have we done?

We calculate the expected event rate for VERITAS as an example of the current generation of IACTs as well as a possible next-generation instrument.

### What is the result

The timescales of the events at mass  $M_{\text{PBH}} < 10^{-10} M_{\odot}$  are detectable with IACTs. However, besides the fast sampling speed, a good sensitivity of flux changes and the ability to monitor a large number of stars simultaneously is required to constrain the PBH abundance in this masses range.

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