

Multiwavelength monitoring of gravitationally lensed blazar QSO B0218+357 between 2016 and 2020

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QSO B0218+357 is currently the only gravitationally lensed source from which very-high-energy (VHE, >100 GeV) gamma-ray emission has been detected. We report the multiwavelength monitoring observations of this source performed between 2016 and 2020 in radio interferometry, optical, X-ray and gamma-ray bands. During the monitoring individual flares in optical, X-ray and GeV bands have been observed. Simultaneous data taken by the MAGIC telescopes allow us to search for the associated VHE emission, constraining the VHE gamma-ray duty cycle of the source.

We use the exceptional multiwavelength dataset collected to characterize the lensing galaxy, model the source-lens-observer geometry, and determine the magnifications and time delays for different components of the image.

We model the quiescent emission in which the high energy bump is explained as a combination of Synchrotron-Self-Compton and External Compton processes. The bulk of the low energy emission is explained as originating from a tens of parsecs scale jet.

Keywords

AGN; lensing; non-thermal processes

Collaboration

MAGIC

other Collaboration

Fermi

Subcategory

Experimental Results

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