

Resolving the blazar gamma-ray emission regions with gravitational microlensing

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The blazars high-energy emission is believed to be produced in the jets, powered by their central supermassive black holes. At the same time the location of the emission region within the jet is presently uncertain - mainly due to its extremely small angular size, far beyond the capabilities of the existing gamma-ray instruments. However, in the rare case of the gravitationally lensed blazars, it is possible to use the natural “magnifying lens” to assist the situation. I will report on the detection of the gravitational microlensing effect for two gamma-ray loud blazars - PKS 1830-211 and B0218+357,- which allowed for the first time to resolve their emission regions, providing strong arguments for their connection with the direct vicinities of the corresponding central black holes.

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