

Hadronic synchrotron mirror model for blazars- Application to 3C279

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On the 28th of January, an orphan very-high-energy γ -ray flare from 3C279 was detected, not accompanied by flaring in the adjacent GeV gamma-ray regime. Orphan flares have to be caused by different processes than normal γ -ray flares. Specifically, the Hadronic Synchrotron Mirror Model has been proposed to provide a consistent explanation of this flare. The expected target photon densities have been calculated analytically using the cloud/mirror model. The results suggest that the Hadronic Synchrotron Mirror Model may provide a plausible explanation. A semi-analytical model has been developed to represent the Hadronic Synchrotron Mirror Model in a realistic fashion. Our analytical estimates are confirmed by detailed numerical simulations of the Hadronic Synchrotron Mirror scenario, predicting snap-shot SEDs and light curves as well as neutrino emission.

Author: OBERHOLZER, Laenita

Presenter: OBERHOLZER, Laenita

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