PROCEEDINGS OF SCIENCE

Detection of persistent sub-GeV γ-ray emission towards SS433/W50

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We report on the discovery of a persistent gamma-ray signal from a source positionally coincident with the microquasar SS433 and the surrounding W50 nebula. The gamma-ray flux is steady in the ~ 5 years of observations collected by the *Fermi*-LAT, and its spectral energy distribution displays a distinct maximum at ~ 250 MeV, extending up to only ~ 800 MeV. Given the large kinetic power and the known existence of baryonic material in the jets of SS433, we consider the possibility that the observed emission is produced through proton-proton collisions at the SS433/W50 interaction regions. Other scenarios cannot be ruled out, however, including gamma-ray emission produced by relativistic electrons through Inverse Compton or relativistic Bremsstrahlung processes in the jets of SS433, or the high-energy fluxes being originated in the W50 nebula itself. We refer to [1] for a more detailed discussion.

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References

[1] P. Bordas, R. Yang, E. Kafexhiu & F. Aharonian, ApJ, 807L, 8B, 2015