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SS433 as a natural laboratory for astrophysical neutrinos

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We discuss the production of very high energy neutrinos in the jets of the microquasar SS433. The interactions of shock-accelerated protons and electrons at the base of the precessing jets give rise, also, to a flux of gamma rays. Taking into account the absorption effects, we can estimate a surviving gamma-ray signal to be detected with Fermi LAT and with Cherenkov telescopes.

Neutrinos, which escape unaffected from the production site, could also be observable at neutrino telescopes such as IceCube. In the context of the present model, future measurements of gamma rays can be used to establish constraints on the expected neutrino signal. Experimental results will allow us to check the consistency of the model and to gather important information about key parameters of the system, such as those related to the gamma-ray absorption processes and the power in relativistic protons.

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