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Gamma-ray emission from Cyg X-1 and Cyg X-3

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In two recent papers (Zdziarski et al. 2017, 2018), we presented measurements by the Fermi/LAT and theoretical interpretation of the gamma-ray spectra from two Galactic microquasars, Cyg X-1 and Cyg X-3. In both sources, orbital modulation (due to Compton anisotropy of scattered stellar photons from the donor) has been measured, which has allowed us to estimate of the location of the bulk of the gamma-ray emission. The theoretical interpretation of the broad-band spectra (from radio to gamma-rays) is based on extended-jet and accretion models, developed earlier. We have also measured cross-correlations between the gamma-rays and both radio and X-ray emission, which put constraints on the respective emission sites and, in the case of Cyg X-3, implies the presence of extended periods of advection of magnetic fields through the accretion flow. The obtained set of results allows us to make predictions for the spectra and orbital modulation of those sources when observed by the CTA.

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