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TeV-PeV gamma-ray emissions from Galactic Stellar-mass Black Holes

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Galactic stellar-mass black holes, both isolated black holes and black holes in binaries, are proposed as Galactic PeVatron candidates. Recent discovery of TeV-PeV gamma-rays from micro-quasars by LHAASO strengthens the scenarios of micro-quasars as PeVatrons, but the origin of gamma-ray emissions are unknown. LHAASO also discovered mysterious “dark” sources that do not exhibit counterparts in lower-energy gamma-rays, the origin of which is unknown. In this talk, I will talk about our modeling of gamma-ray emissions from magnetized accretion flows in LHAASO-detected micro-quasars. In addition, I would like to discuss isolated black holes wandering in molecular clouds as a potential origin of “dark” sources.

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