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Gamma-ray and neutrino emission from radiatively inefficient accretion flows

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The origins of cosmic MeV gamma-ray and high-energy neutrino backgrounds have been veiled in mystery since their discoveries. In this talk, I will propose radiatively inefficient accretion flows in low-luminosity active galactic nuclei (AGN) as the common source of these backgrounds. Thermal electrons in low-luminosity AGN emit MeV gamma-rays by the Comptonization process, while non-thermal protons accelerated by stochastic acceleration can produce PeV neutrinos via hadronic interactions. With the contributions by luminous AGN, accretion flows onto supermassive black holes can contribute to a broad range of high-energy backgrounds (keV-MeV for photons and TeV-PeV for neutrinos). I also discuss point-source detectability by future MeV gamma-ray and high-energy neutrino experiments.

Collaboration name

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