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Ultrahigh-energy cosmic-ray induced gamma-ray and neutrino fluxes from blazars

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Blazars are potential candidates of cosmic-ray acceleration up to ultrahigh energies (> 1 EeV). For an efficient cosmic-ray injection from blazars, ⊠ collisions with the extragalactic background light and cosmic microwave background can produce gamma-ray and neutrino fluxes in the TeV and PeV-EeV energies, respectively. Such a line-of-sight cosmogenic gamma-ray flux can contribute to the spectra measured by ground-based air-Cherenkov telescopes from individual blazars, while PeV-EeV neutrinos form a "guaranteed"component in addition to any sub-PeV neutrinos produced in the blazar jet and as detected by IceCube. We calculate line-of-sight cosmogenic fluxes from the blazars TXS 0506+056, PKS 1502+106 and GB6 J1040+0617, which have been associated with IceCube neutrino events. We discuss conditions required for detection of these fluxes by current and upcoming gamma-ray and neutrino telescopes.

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