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Cosmic ray interaction models applied to a large blazar sample

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I present the results of cosmic ray interaction models applied to an unprecedentedly large sample of blazar AGN. The modeling was performed using an efficient, self-consistent and time-dependent numerical framework newly published as open-source software. I show that for a large number of sources, the X-ray and very-high-energy gamma-ray fluxes can be explained by cascades triggered by cosmic ray proton interactions in the jet. I briefly discuss the implications of these results for future multi-messenger searches and for understanding the role of blazars as IceCube sources.

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