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Neutrinos from Gamma-Ray Bursts, and tests of the UHECR paradigm

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Gamma-ray bursts (GRBs) are the most energetic electromagnetic outburst class in the Universe, and candidates for the sources of the ultra-high energy cosmic rays (UHECRs). We discuss the neutrino flux associated with the prompt emission from GRBs, such as its possible contribution to the observed astrophysical neutrino flux, and we show the implications of recent stacking searches for neutrino production models in GRBs. Finally, we address the question if GRBs can be the sources of the UHECRs in light of recent Auger observations pointing towards nuclei at the highest energies, and the role of neutrinos to test this paradigm.

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