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**Constraining the origin of UHECRs and astrophysical neutrinos** MARCO MUZIO, GLENNYS FARRAR, New York Univ NYU, MICHAEL UNGER, Karlsruhe Institute of Technology — We constrain properties of ultra-high energy cosmic ray source environments (and potentially astrophysical neutrino sources), including their photon temperature, gas density, size, magnetic field strength and coherence length, using UHECR and neutrino spectra and composition. Some astrophysical source types which are consistent with a common origin of UHECRs and astrophysical neutrinos are presented. Under the common origin hypothesis, this analysis provides a new probe into the validity of hadronic interaction models.

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