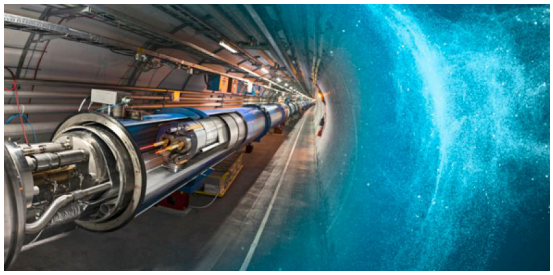

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Correlation between IceCube neutrinos and X-ray flaring blazars

Monday, 21 March 2022 15:00 (15 minutes)

Gamma-ray bright blazars are beginning to emerge as a very plausible source of at least some of the very-high-energy neutrinos detected by IceCube. Most searches for a correlation between blazars and neutrino events have so far focused on gamma-ray flaring blazars, motivated by the fact that very-high-energy gamma-rays are co-produced with neutrinos if neutrinos are produced through photo-pion interactions of relativistic protons with dense target photon fields. However, the same target photon fields also act as a source of gamma-gamma opacity, leading to the development of electromagnetic cascades. The energy of the co-produced photons is therefore more likely to emerge in the soft gamma-ray to X-ray regime instead of high-energy and very-high-energy gamma-rays. We are therefore conducting a systematic search for a correlation between IceCube Gold and Bronze alerts and X-ray flaring blazars, utilizing the Swift-XRT blazar monitoring program. First preliminary results of this search will be presented.

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