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Time-dependent polarisation of radio emission from AGN jets during the neutrino flare episodes

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Jet-star interactions in hadronic jets would facilitate proton-proton (pp) interactions in addition to electromagnetic flaring activities. The charged pions resulted from the pp interactions will give rise to neutrino emission, while the secondary electrons may modify the synchrotron spectrum.

In this work, we determine the spectropolarimetric signatures of AGN jets during neutrino flaring events triggered by pp interaction when a star traverses into the jets. We consider stars of different stellar types, such as WR stars, red supergiant stars, and solar like stars. We focus on how stellar wind properties - particularly the mass loss rate - affect the size of the emitting region by establishing pressure balance with the jet ram pressure, leading to a transition from optically thin to thick emission produced by the secondary electrons.

Section

High Energy

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