Contribution ID: **280** Type: **oral**

Evaluating the contribution of pulsar wind nebulae to the Galactic high-energy neutrinos

Tuesday, 24 September 2024 17:17 (17 minutes)

With the continuous injection from the powerful pulsars, pulsar wind nebulae (PWNe), especially the young ones, are among the most energetic astrophysical sources in the Galaxy. The TeV-PeV gamma-ray emission is usually interpreted as originating from inverse Compton Scattering in a leptonic scenario, but the hadronic origin cannot be ruled out. Therefore, PWNe could be possible candidates that contribute to the high-energy neutrinos via hadronic process detected by IceCube. Assuming the existence of protons, several works before have estimated the neutrino emission from the PWNe using different TeV catalogues. However, such results rely on the TeV observations and may omit unresolved sources. Here, instead of repeating the regular procedure, we model the temporal evolution of the young PWNe from a synthetic population in the Galaxy and calculate the neutrino flux directly.

Primary author: LIANG, Xuan-Han (Nanjing University)

Presenter: LIANG, Xuan-Han (Nanjing University)

Session Classification: Astrophysical Multimessenger techniques & observations - 2