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IceCube astrophysical neutrino 7.5-year data

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The IceCube Neutrino Observatory detects astrophysical neutrinos with energies above TeV scales which provides the first solid evidence for astrophysical neutrinos from cosmological accelerators. Here we describe The High Energy Starting Event (HESE) selection and why it is useful for probing the high energy astrophysical landscape. With higher statistics taken over 7.5 years, we have been able to test the diffuse astrophysical flux whilst amplifying our rejection of atmospheric backgrounds using our neutrino veto region method. By doing so, the chance of understanding the characteristics of cosmic sources is also improved. With improved systematics and calibration, we aim to analyze rare topologies in the IceCube detector such as tau candidates, as well as Glashow neutrinos.

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