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Neutrino signal from Seyfert galaxies

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IceCube collaboration has previously reported an evidence for neutrino signal from a Seyfert galaxy NGC 1068. This may suggest that all Seyfert galaxies emit neutrinos. To test this hypothesis, we identify the best candidate neutrino sources among nearby Seyfert galaxies, based on their hard X-ray properties. Only two other sources, NGC 4151 and NGC 3079 are expected to be detectable in 10 years of IceCube data. We find an evidence for neutrino signal from both sources in publicly available ten-year IceCube dataset. The chance coincidence probability to find the observed neutrino count excesses in the directions of the two out of two expected sources, in addition to the previously reported brightest source, is p<2.6e-7. This corresponds to the detection of Seyfert galaxies as a neutrino source class.

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