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The Potential of Water-Cherenkov Air Shower Arrays for detecting transient sources of high-energy astrophysical neutrinos

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We highlight the capacity of current and forthcoming air shower arrays utilizing water-Cherenkov stations to detect neutrino events spanning energies from 10 GeV to 100 TeV. This detection approach leverages individual stations equipped with both bottom and top photosensors, making use of features of the signal time trace and machine learning techniques. Our findings demonstrate the complementary of this method to established and future neutrino-detection experiments, including IceCube and the upcoming Hyper-Kamiokande experiment.

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