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# Neutron detection and distinguishing high energy Anti-neutrinos in Super-Kamiokande

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When a neutrino undergoes a quasi-elastic charged current interaction, it will produce a neutron or a proton, depending on whether or not the neutrino was an antiparticle. These neutrons can be identified by the distinctive 2.2MeV γ-ray signal produced after neutron capture on hydrogen. I will discuss new techniques to detect these 2.2MeV γ-rays in Super Kamiokande, and application of these techniques to improve sensitivity to atmospheric anti-neutrinos.

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