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Intrinsic physics limitations to reconstruction

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At the characteristic energies (~20 GeV and below) at which ORCA/PINGU will look for hierarchy-dependent effects in the neutrino interaction rate, random fluctuations in the event characteristics will play a significant roll in limiting the accuracy of any reconstruction. In this contribution, the effects of such fluctuations in the determination of the energy and direction of muon tracks and shower events is investigated for neutrino interactions in seawater. These are presented as limitations both for a 'perfect' detector (all photons detected) and the reference ORCA detector, where only some photons will be detected.

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