

Detecting supernova neutrinos in the ice of the South Pole

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Current supernova detectors will deliver a tremendous neutrino statistics for a core collapse supernova (SN) within our Galaxy or slightly beyond. However, with a rate of 2 SNe per century, awaiting the next discovery requires patience. The perspective changes instantly, once the sensitivity of neutrino detectors reaches a scale allowing the detection of SNe in neighboring galaxies. A low-energy neutrino detector of 10 Mton mass would deliver several SN detections per year, thereby opening enormous new scientific opportunities. In this talk we describe the motivation, along with detector concepts, that utilizing the clear ice at the South Pole and have the potential to reach the required sensitivity in a cost effective manner. More scientific motivation for a low-energy extension will be discussed in the talk by Darren Grant.

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