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The precise inverse beta decay

Tuesday 29 October 2024 11:30 (20 minutes)

We evaluate the cross section of inverse beta decay, including all theoretical uncertainties. We focus on the moderate energy range from a few MeV up to hundreds of MeV, which includes neutrinos from reactors and supernovae. We assess the uncertainty on the cross section, which is relevant to experimental advances and increasingly large statistical samples. We also present a new parameterised model of electron antineutrino emission from supernova and test its adequacy in describing the distributions of energy, time and angle comparing with SN1987A data.

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