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**Neutrinos from Supernovae: Flavor Transformation, Detection and Nucleosynthesis**

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Supernova neutrinos are of interest for a number of reasons. A future detection will provide a rare opportunity to obtain information about the supernova core, and perhaps also about the hydrodynamics of the explosion and/or the properties of the neutrinos themselves. In addition to traditional supernovae, MeV scale neutrinos also originate from sources such as black-hole accretion disk supernova, gamma ray bursts and compact object mergers. Astrophysically produced MeV scale neutrinos exhibit a rich variety of behavior. Neutrino flavor transformation in all these environments is affected by a changing stellar and neutrino density profile, and new flavor transformation behavior of neutrinos recently has been discovered. Neutrinos from these environments play a crucial role in element synthesis. I will review some recent developments in these areas.