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Role of Nucleon Strangeness in Core-Collapse Supernova Explosions[1] TIMOTHY HOBBS, University of Washington, MARY ALBERG, Seattle University, GERALD MILLER, University of Washington — The ongoing quest to simulate explosions of core-collapse supernovae (CCSNe) in hydrodynamical calculations has placed an enormous premium upon the nuclear and hadronic processes integral to the system's evolution (*i.e.,* the *microphysics*). In this context, modifications to the neutrino-nucleon elastic cross section have been identified as potentially key to ensuring that stalled bounce shocks are sufficiently re-energized to produce the desired explosion. An important source of such corrections can be found in a negative value for the nucleon's strange helicity content Δs, which leads to the enhancement and suppression of the $\nu - p$ and $\nu - n$ total cross sections, respectively. In this talk, however, I summarize the results of a recent analysis which led to a comparatively small magnitude for the strange helicity ($\Delta s \geq -0.1$) — a fact which renders nucleon strangeness an unlikely candidate for the decisive missing ingredient necessary in simulations for CCSN explosions.

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Timothy Hobbs
University of Washington

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