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Constraints on Neutrino Oscillations and Spectra from Neutrino Nucleosynthesis[1] SAM M. AUSTIN, MSU/NSCL, ALEX HEGER, CLARISSE TUR, JINA COLLABORATION — We have studied the sensitivity to variations in the triple alpha and $^{12}C(\alpha,\gamma)^{16}O$ reaction rates, of the yield of the neutrino process isotopes ^{7}Li, ^{11}B, ^{19}F, ^{138}La, and ^{180}Ta in core collapse supernovae. Compared to solar abundances, less than 15% of ^{7}Li, about 25-80% of ^{19}F, and about half of ^{138}La is produced in these stars. Over a range of $\pm 2\sigma$ for each helium-burning rate, ^{11}B is overproduced and the yield varies by an amount larger than the variation caused by the effects of neutrino oscillations. The total ^{11}B yield, however, may eventually provide constraints on supernova neutrino spectra.

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