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Collective Neutrino Oscillations in the Presence of Collisions

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In dense astrophysical environments, the evolution of neutrino flavor is non-linear which can lead to many interesting phenomena. However, this non-linear evolution of neutrino flavor also called the "collective neutrino oscillations" is only beginning to be understood, especially in conjunction with collisions. I will discuss the effect of neutrino back-scattering in the interior of a core-collapse supernova using a simplified model.

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