

Fast neutrino flavor conversions near the SN core

Friday, 23 June 2017 14:20 (15 minutes)

We point out that neutrino fluxes from a supernova can show substantial flavor conversions almost immediately above the core.

Using linear stability analyses and numerical solutions of the fully nonlinear equations of motion, we perform a detailed study of these fast conversions. Using fluxes and angular distributions predicted by supernova simulations, we find that fast conversions can occur within tens of nanoseconds, only a few meters away from the putative neutrinospheres. If these fast flavor conversions indeed take place, they would have important implications for the supernova explosion mechanism and nucleosynthesis.

Primary author: Mr MIRIZZI, Alessandro (University of Bari)

Presenter: Mr MIRIZZI, Alessandro (University of Bari)

Session Classification: Joint Working Group: Astroparticle and Neutrino Physics

Track Classification: Neutrino Physics Working Group