NBIA Summer School on Neutrinos: Here, There & Everywhere

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Neutrino Energy from Thermal Processes in Very Massive Stars

For massive and very massive stars, neutrinos become the main contributor of energy loss through thermal processes that occurred at the center of the star. There are five thermal neutrino processes being produced during the evolution of very massive star (VMS); plasma neutrino, photoneutrino, pair neutrino, Bremsstrahlung and recombination process. We use the realistic conditions of temperature, density, electron number density and element abundances of the VMS. The energy loss of neutrinos from the very massive star of $150M_{\odot}$ solar and $300M_{\odot}$ solar with Z=0.002 is presented and the dominant processes that are involved will be discussed.

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