

Strong magnetic field impact on the neutrino transportation inside the core-collapse supernova

Wednesday, 11 September 2024 16:45 (15 minutes)

Strong magnetic fields could exist in the inner regions of a supernova. Inside these magnetic fields, the phase space of the electrons becomes quantized. As a result, the rates of weak interaction processes can deviate from the field-free case.

This talk focuses on the absorption and emission process of (anti)neutrinos in such strong fields. This process is crucial, as it determines the opacity of the neutrinos and the position of the (anti)neutrino sphere within the supernova.

Such impacts of the strong magnetic field could ultimately leave an imprint on the nucleosynthesis yields produced during the supernova event.

Primary author: LUO, Yudong (Peking University)

Co-authors: Prof. ZHA, Shuai (Yunnan Observatories, CAS); KAJINO, Toshitaka (Beihang University)

Presenter: LUO, Yudong (Peking University)

Session Classification: Explosive Stellar Objects and Nuclear Physics

Track Classification: Explosive Stellar Objects and Nuclear Physics