

Dejan Stojkovic (Department of Physics, SUNY at Buffalo, USA)

Elektroslabe zvezde

Abstract:

The talk will focus on the possible existence of an electroweak star – a compact stellar-mass object whose central core temperature is higher than the electroweak symmetry restoration temperature. The source of energy of the electroweak star is standard-model non-perturbative baryon number (B) and lepton number (L) violating processes that allow the chemical potential of B+L to relax to zero. The energy released at the core is enormous, but gravitational redshift and the enhanced neutrino interaction cross section at these energies make the energy release rate moderate at the surface of the star. The lifetime of this new quasi-equilibrium can be more than ten million years. This is long enough to represent a new stage in the evolution of a star if stellar evolution can take it there.