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Poster ”The effect of late-time heating in hybrid millisecond pulsars”

Thursday 23 May 2024 14:00 (1 hour)

Abstract: “We study the thermal evolution of compact stars within the realistic hybrid equation of state that incorporates hadronic matter and quark-gluon plasma in the core of the star. By performing 1D numerical simulations of the thermal evolution of compact stars, it is shown that for rapidly rotating millisecond pulsars matter can deviate from the chemical equilibrium causing an appearance of a new heating source, dubbed the rotochemical heating. Moreover, these simulations accounted for a different atmosphere composition, as well as pairing between nucleons and quarks. The obtained results reveal a notable effect of the rotochemical heating in quark matter on the cooling of old millisecond pulsars that could be used to probe the existence of deconfined quarks.”

Presenter: PANASIUK, Pavlo

Session Classification: Kindergarten