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Implications of dense matter properties on neutron-star thermal evolution on various time scales

Interplay between recent progress in studies of thermal evolution of neutron stars and dense matter theory is discussed. Consideration is limited to the nucleonic composition of neutron-star interior. Passive cooling of isolated neutron stars is considered along with heating and cooling of accreting neutron stars in binary systems. Cases of practical interest are highlighted, where the usual concepts of quasi-stationary envelope and isothermal core of a neutron star are violated. The work is supported by the Russian Science Foundation Grant 24-12-00320.

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