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FRG Approach to Nuclear Matter in Compact Stars

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Functional renormalization group (FRG) is an exact method for taking into account the effect of quantum fluctuations in the effective action of the system. The FRG method applied to effective theories of nuclear matter yields equation of state witch incorporates quantum fluctuations of the fields. Using the local potential approximation the equation of state for Walecka-type models of nuclear matter under extreme conditions is determined. These models are tested by solving the corresponding Tollman-Oppenheimer-Volkov (TOV) equations and investigating the properties (mass and radius) of the corresponding compact star models.

On behalf of collaboration:

NONE

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