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$\Lambda\Lambda$ Interaction and Neutron Stars

We investigate the effects of $\Lambda\Lambda$ interactions to the
bulk properties of neutron stars.
We employ a few Skyrme-type and a finite-range force models for the
description of $\Lambda\Lambda$ interactions,
where the parameters of the model are determined to reproduce the binding energies
of double-Λ hypernuclei.
Equation of state of neutron star matter is calculated self-consistently,
and the mass-radius relation of neutron stars is obtained by solving
Tolman-Oppenheimer-Volkoff equations.
Results exhibit strong dependence on the $\Lambda\Lambda$ interaction models,
and the corresponding uncertainties are as significant as those from the
dependence on the nucleon-nucleon interaction models.

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