Contribution ID: **32**   Type: **Leading contributed talk**

Gamow-Teller excitations and beta-decay within the Subtracted Second RPA

Monday, 8 July 2024 14:15 (25 minutes)

Recent applications of the subtracted second random-phase approximation (SSRPA), based on Skyrme functionals, to the study of Gamow-Teller excitations and beta-decay will be presented. The comparison with the conventional random-phase approximation (RPA) results and experimental data is also discussed. It is found that, the amount of Gamow-Teller strength obtained in SSRPA is much lower than the RPA one, and it agrees better with experimental data [1,2]. The inclusion of two-particle-two-hole configurations is responsible for this quenching, avoiding thus the use of any "ad-hoc"quenching factors normally adopted in this kind of studies. The beta-decay half lives are also calculated and discussed, showing that also in this case the inclusion of the wo-particle-two-hole configurations allows for a better description of the experimental values [1,3]. This result may have implications for the computation of nuclear matrix elements in the same framework for neutrinoless double-beta decay.

References
[1] D. Gambacurta, M. Grasso, and J. Engel Phys. Rev. Lett. 125, 212501, (2020)
[2] D. Gambacurta and M. Grasso, Phys. Rev. C 105, 014321, (2022)
[3] D. Gambacurta and M. Grasso, in preparation

session

I. Nuclear Structure and Reactions

Primary author: GAMBACURTA, Danilo (INFN-LNS)

Presenter: GAMBACURTA, Danilo (INFN-LNS)

Session Classification: I. Nuclear Structure and Reactions