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ІЗОСКАЛЯРНИЙ МОНОПОЛЬНИЙ ВІДГУК У НЕЙТРОННО-БАГАТИХ ІЗОТОПАХ МОЛІБДЕНУ З ВИКОРИСТАННЯМ САМОУЗГОДЖЕНОГО НАБЛИЖЕННЯ QRPA

Ізоскалярний гігантський монопольний резонанс (ISGMR) парних ізотопів молібдену ^{92,94,96,98,100}Mo вивчався в рамках самоузгодженого наближення Хартрі - Фока - Бардіна, Купера та Шріффера і квазічастинкового наближення випадкових фаз. У розрахунках використано десять наборів взаємодій типу Скірма з різними значеннями коефіцієнта нестисливості ядерної матерії K_{NM}. Розраховані розподіли сил, центроїдних енергій E_{cen}, ренормованих енергій E_s і обмежених енергій E_{con} в ISGMR порівнюються з наявними експериментальними даними. При відповідному значенні нестисливості ядерної матерії K_{NM} кілька типів взаємодій Скірма були успішними в описі розподілу сил ISGMR в ізотопах ^{92,94,96,98,100}Mo. У результаті було виявлено великі кореляції між E_{cen} і K_{NM}.

Ключові слова: розподіл сил, сили Скірма, наближення Хартрі - Фока - Бардіна - Купера - Шріффера, квазічастинкове наближення випадкових фаз.

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ISOSCALAR MONOPOLE RESPONSE IN THE NEUTRON-RICH MOLYBDENUM ISOTOPES USING SELF-CONSISTENT QRPA

The isoscalar giant monopole resonance (ISGMR) of even molybdenum isotopes ^{92,94,96,98,100}Mo has been studied within the Skyrme self-consistent Hartree - Fock - Bardeen, Cooper, and Schrieffer and quasi-particle random phase approximation. Ten sets of Skyrme-type interactions of different values of the nuclear matter incompressibility coefficient K_{NM} are used in the calculations. The calculated strength distributions, centroid energies E_{cen}, scaled energies E_s and constrained energies E_{con} of ISGMR are compared with available experimental data. Due to the appropriate value of the nuclear matter incompressibility K_{NM}, several types of Skyrme interactions were successful in describing the ISGMR strength distribution in the ^{92,94,96,98,100}Mo isotopes. As a result, high correlations between E_{cen} and K_{NM} were found.

Keywords: strength distribution, Skyrme force, Hartree - Fock - Bardeen - Cooper - Schrieffer, quasiparticle random phase approximation.

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Надійшла/Received 05.05.2023