# SPIN-DIPOLE STRENGTHS AND NEUTRON SKIN THICKNESS OF $^{90}$Zr, $^{132}$Sn, $^{208}$Pb

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The strength functions of charge exchange spin-dipole (SD) excitations are calculated in the continuum quasiparticle random-phase approximation based on the Fayans density functional DF3-f with modified isovector part [1]. An impact of the isovector parameter $h_2^-$ of the functional on the charge-exchange spin-dipole excitations ($0^-$, $1^-$, $2^-$) are studied for $^{208}$Pb, $^{132}$Sn and $^{90}$Zr. The sum rules are calculated using both ground state radii and direct integration of the total SD strength distributions [2]. A comparison with the experimental SD sum rule in $^{90}$Zr [3] gives one an additional possibility to check previously estimated h2- values [1] which described well the recent combined estimate for the neutron skin thickness $\Delta Rnp$ in $^{208}$Pb and corresponding parameters of nuclear matter equation of state - symmetry energy J ($\rho_0$) and a slope parameter L ($\rho_0$) [4].
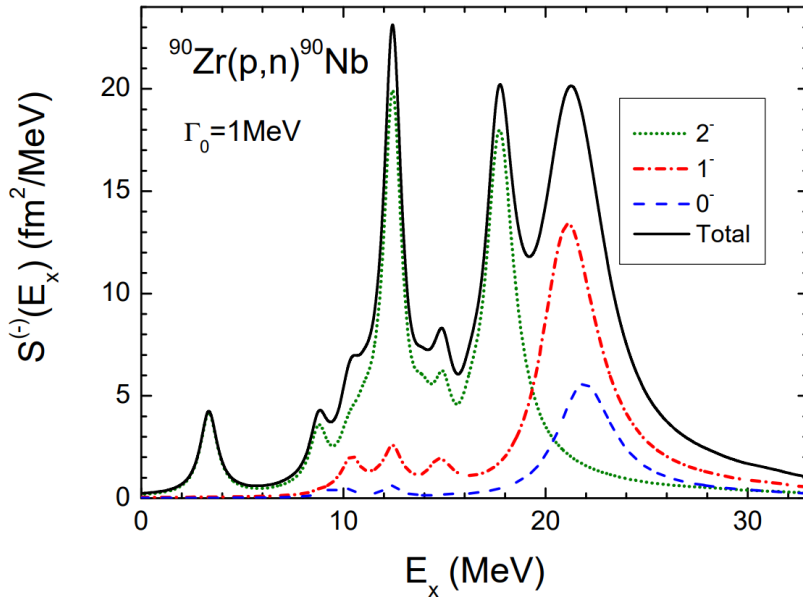
Fig. Strength functions of $0^-$ (in blue), $1^-$ (red) and $2^-$ (green) excitations in $^{90}$Zr(p,n)$^{90}$Nb and total strength function (ful line). Calculation with the DF3-f functional for the h-2 = 1.5.

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