

## Possible signature of tensor interactions observed via (p,dN) reaction

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We report observation of possible new evidence for tensor interactions from <sup>16</sup>O(p,dN) and <sup>12</sup>C(p,dN) measurements at 392-MeV proton under quasi-free scattering kinematics but at scattering angle relevant to neutron pick up mechanism. In our earlier work[H.J. Ong, et al., Phys. Lett. B725, 277 (2013)], we reported observation of large components of high-momentum neutrons via (p, d) scattering on <sup>16</sup>O at high-momentum transfer, and showed the ratio of the cross sections populating different final states are consistent with model that includes tensor interactions.

To investigate isospin dependence of high momentum component, an exclusive (p, dN) reaction experiment was performed recently at RCNP. The out-going deuteron were momentum-analyzed by the high-resolution spectrometer GrandRAIDEN. Recoiled nucleons were measured by a plastic scintillator arrays placed opposite the spectrometer at angles corresponding to recoilless condition for residual nuclei. Missing mass spectra were reconstructed using the detected deuteron and nucleon momenta. For <sup>16</sup>O(p,dp)<sup>14</sup>N, <sup>12</sup>C(p,dp)<sup>10</sup>B channels, the excitation energy resolution about 200 keV allows to resolve some final states of the residual nuclei in the excitation energy spectra. Among the low-lying states in both <sup>14</sup>N and <sup>10</sup>B, strong suppression  $T=1$  states was observed, which were observed in electron induced deuteron knockout reaction (e, e'd) [R. Ent, et al., Nucl. Phys. A578(1994)93-133]. The missing transition to  $T=1$  states suggests that high-momentum-correlated pn pairs in nuclei are dominant  $T=0$  nature. For both target nuclei, in neutron channel (p,dn) was found to be strongly suppressed in comparison with (p,dp) channel. Both features can be understood by considering the tensor interactions.