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Complete electric dipole response in ^{120}Sn from high-resolution polarized proton scattering at 0° ⋆ — •Anna Maria Heilmann for the EPPS0-Collaboration — Technische Universitt Darmstadt

With recent experimental progress at the Research Center of Nuclear Physics in Osaka, Japan [1] intermediate energy polarized proton scattering experiments can be performed at very forward scattering angles and with an energy resolution in the order of $\Delta E/E \approx 8 \cdot 10^{-5}$. Using this setup a consistent measurement of the dipole modes both above and below the neutron emission threshold is possible. The cross sections under $0° - 4°$ and observables for the polarization transfer of E1 and M1 excitations in ^{120}Sn were measured in an excitation energy range of $5 - 25$ MeV. The systematics of the pygmy dipole resonance (PDR) in stable tin isotopes has been studied at the superconducting linear accelerator S-DALINAC in Darmstadt [2]. From this study it was concluded that knowledge of the complete E1 response would be important to differentiate between relativistic an nonrelativistic QRPA models. From the present measurement the whole B(E1) strength distribution and the branching ratios of the PDR to ground state can be extracted. First results on the E1 strength distribution will be presented.

[1] A. Tamii et al., Nucl. Inst. Meth. A 605, 326 (2009).
[2] B.Özel, J.Enders, H.Lenske, P. von Neumann-Cosel, I.Poltoratska, V.Yu. Ponomarev, A.Richter, D.Savran, and N.Tsoneva, arXiv:0901.2443.

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