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One-phonon excitations of ^{92}Zr from electron scattering * —
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Low-lying collective vibrational excitations in ^{94}Mo have previously been investigated with electron scattering experiments [1] at the 130 MeV superconducting electron accelerator S-DALINAC. The evaluation of the measured form factors as a function of momentum transfer had supported the one-phonon interpretation of symmetric and mixed-symmetric states (MSSs) which have been defined in the framework of IBM-2. In the neighbouring even-even isotone ^{92}Zr formed by N=52 neutrons with two valence neutrons and Z=40 with no protons occupying the $\pi(g_{9/2})$ sub-shell a stronger configurational isospin polarization of the one-phonon states than in ^{94}Mo is expected [2]. In order to verify this expectation, a new electron scattering experiment at the S-DALINAC has been performed. Our data and a comparison to the momentum-transfer dependence of the form factor of the 2^+ states will be presented. The E2 transition strength of the one-quadrupole phonon states and the E3 transition strength of the one-octupole phonon state have been extracted and will be compared to previously derived spectroscopic data on MSSs of ^{92}Zr [3].

[1] O. Burda *et al*, Phys. Rev. Lett. **99**, 092503 (2007).
[2] J. D. Holt *et al*, Phys. Rev. C **76**, 034325 (2007).
[3] C. Fransen *et al*, Phys. Rev. C **71**, 054304 (2005).
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