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Proton inelastic scattering on ^{34}Si and ^{32}Mg . SATOSHI TAKEUCHI, RIKEN, RIKKYO UNIVERSITY COLLABORATION, CNS, UNIVERSITY OF TOKYO COLLABORATION, UNIVERSITY OF TOKYO COLLABORATION, TOKYO INSTITUTE OF TECHNOLOGY COLLABORATION, KEK COLLABORATION — The inelastic scattering of ^{34}Si and ^{32}Mg on a liquid hydrogen target was measured in inverse kinematics at energy of about 64 MeV/nucleon. In combination with $B(E2)$ values obtained from Coulomb excitation experiments^{1,2)}, information on the collective motions of the protons and neutrons can be studied separately. Experiment was performed at the RIPS beam line in RIKEN. A recently developed time-of-flight spectrometer and a NaI(Tl) array (DALI2) were used for particle identification of scattered particles and for γ -ray detection, respectively. De-excitation γ rays from known 2^+ states and other higher states are clearly observed in γ -ray spectra for both nuclei. Deduced (p,p') cross sections from ground state to the 2^+ states are compared with those of the Coulomb excitation to study the neutron and proton quadrupole matrix elements.

References

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- 2) T. Motobayashi et al., Phys. Lett. B **346**, 9(1995).

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