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Small spectroscopic factors of low-lying positive parity states in 31Mg[1] NOBU IMAI, Center for Nuclear Study, University of Tokyo, MOMO MUKAI, University of Tsukuba, JOAKIM CEDERKALL, Lund University, HOSSEIN AGHAI, PH-Department, CERN, PAVEL GOLUBEV, Lund University, HAAKAN JOHANSSON, Chalmers University of Technology, DAID KAHL, Center for Nuclear Study, University of Tokyo, JAN KURCEWICS, PH-Department, CERN, TAKASHI TERANISHI, Kyushu University, YUTAKA WATANABE, IPNS, KEK — The single particle structures of even-odd nuclei around the so-called "island of inversion" would give us the direct evidence of such a shell evolution in this region. We measured the proton resonance elastic scattering on ^{30}Mg re-accelerated upto 2.92 MeV/nucleon by REX-ISOLDE to study the isobarig analog resonances (IARs) of the low-lying bound states in ^{31}Mg. The proton resonance elastic scattering is a complementary method of (d,p) reaction. We observed three resonances which can be regarded as the IARs of ^{31}Mg. The proton widths of the first two resonances give a rise to the spectroscopic factors for the two positive parity states in ^{31}Mg which were found to be strongly quenched compared to those for the ^{35}S and ^{37}Ar. Comparison with a modern shell model calculation suggests that the degrees of the ν(2p-2h) configuration in ^{30}Mg would be less than considered [1].

[1] N. Imai, *et al.*, Phys. Rev. C, in press.

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