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Study of 22,23Na+p resonance scattering via thick-target inverse kinematics method

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22,23Na+p resonance scattering were studied via thick-target inverse kinematics method, for the exit-channel resonance parameters of compound nuclei 23,24Mg. High-purity 22Na secondary beam was produced by 1H(22Ne,22Na)n reaction at RIBLL1, excitation functions of 22Na(p,p) were obtained at two angles up to 4MeV. The deduced 23Mg resonances were used for the evalution of the reaction rates of the 19Ne(a,p)22Na reaction. In the case of 23Na+p, the proton and alpha decay partial width of compound nucleus 24Mg were deduced and applied for the astrophysical S-factor of the 12C+12C fusion reaction.

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