

# Quasi-free photoproduction of $\eta$ -meson off the neutron

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Quasi-free photoproduction of  $\eta$ -mesons off nucleons bound in the deuteron has been measured with the CBELSA/TAPS detector for incident photon energies up to 2.5 GeV at the Bonn ELSA accelerator . The  $\eta$ -mesons have been detected in coincidence with recoil protons and recoil neutrons, which allows a detailed comparison of the quasi-free  $n(\gamma, \eta)n$  and  $p(\gamma, \eta)p$  reactions. The excitation function for  $\eta$ -production off the neutron shows a pronounced bump-like structure at incident photon energies around 1 GeV and a smaller one around 1.8 GeV, which are absent for the proton, indicating different contributions of nucleon resonances. The invariant mass distribution of  $\eta$ -mesons and recoil neutrons shows also a narrow structure with a width comparable to the instrumental resolution.

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