

Coherent neutral-pion and eta-meson photoproduction on the deuteron studied at ELPH

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We have studied the interaction between the eta meson and deuteron from measurement of cross sections for coherent neutral-pion and eta-meson photoproduction on the deuteron. We have found a narrow resonance-like bump in the eta-deuteron subsystem at the vicinity of the threshold, suggesting strong eta-deuteron attraction. The sharp backward-peaking angular dependence of deuteron emission, predicted by the existing theoretical calculations, does not appear. We discuss the possibilities of using coherent neutral-pion and eta-meson photoproduction on a nucleus to study the eta-nuclear interaction.

References:

Phys. Rev. C 104, L052201 (2021); Phys. Rev. C 105, 045201 (2022).

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