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Neutral particles discrimination with BGO in then BGOOD experiment

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The BGOOD experiment at the ELSA facility has been designed to investigate hadron structure through the study of non-strange and strange meson photoproduction on the nucleon. The setup uniquely combines a BGO crystal calorimeter with a large aperture forward magnetic spectrometer providing excellent detection of both neutral and charged particles.
To accurately reconstruct the final state and minimize particle misidentification, the optimization of photon-neutron discrimination criteria in the BGO calorimeter is continuously evolving.
The different processes underlying detection of high-energy photons and neutrons in the BGO calorimeter, are responsible for differences in the main features of signal clusters associated to these two particles in the detector.
In this contribution I will describe the photon-neutron discrimination criteria that we have developed on the base of this features and present a comparison with simulation.

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