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Preliminary Compton imaging results of the AGATA A006 detector

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By comparing the pulse shapes, using pulse shape analysis (PSA), the interaction positions within a position sensitive HPGe crystal can be accurately located. Compton Image Reconstruction can be used to create an image testing the accuracy of the ability to locate the positions of scatter and absorption events, through PSA. The more accurately the points of interaction are known the better the image will be, thus the PSA algorithms are. An interesting use for this is for imaging applications, most commercial Compton imagers use scintillators but the energy resolution from these systems is poor. One suggested method would be to utilize two planer Ge strip detectors but despite the high energy resolution the efficiency is poor due the detector being operated in coincidence. To achieve increased efficiency and high resolution, a large volume HPGe position sensitive crystal, such as the AGATA A006 detector, can be utilized to detect full energy events that Compton scatter within the detector. Results of Compton Imaging from the AGATA A006 detector will be discussed.

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