MATTER AND TECHNOLOGIES

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A permanent magnet system for multi 100 MeV electron positron pair detection

We present the development and experimental testing of a permanent magnet system to detect electron positron pairs on high intensity laser experiments at Astra Gemini. These experiments where designed to measure fundamental QED phenomena, like the Linear Breit-Wheeler effect as an example for e^+e^--pair production from quantum vacuum, or strong field effects like the Nonlinear Breit-Wheeler effect, measured directly during strong laser γ-beam collisions or as part of QED cascade processes, triggered by radiation reaction photons.

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