Abstract for an Invited Paper for the HAW05 Meeting of The American Physical Society

## **Overview of gamma ray tracking** I-YANG LEE, Lawrence Berkeley National Laboratory

Gamma ray energy tracking is a new concept for a detector array with unprecedented capabilities. In this type of detector, the position and energy of individual interactions of all the gamma rays are identified, and the scattering sequences of the gamma rays are reconstructed. Such an array will give high peak efficiency, peak-to-background ratio, and position resolution. A number tracking detector projects have been started recently in US, Japan, Canada and Europe. In this talk I will present physics opportunities provided by tracking detectors, and review the recent progress of the construction projects, including the production and testing of segmented detector, the use of digital electronics for signal processing, results from an in-beam experiments, and design efforts for various subsystems.