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A Gas Electron Multiplier (GEM) Detector for Fast Neutron Imaging C.C. JEWETT, University of California at Berkeley, M. MCMAHAN, Lawrence Berkeley National Laboratory, J. CERNY, University of California at Berkeley and Lawrence Berkeley National Laboratory , L. HEILBRONN, M. JOHNSON, Lawrence Berkeley National Laboratory — We have built a Gas Electron Multiplier (GEM) detector for detection of fast neutrons at Lawrence Berkeley National Laboratory. The detector consists of a 0.0625 inch thick polypropylene neutron converter, three GEM foils and a grid of 16 readout pads on a printed circuit board. In this talk, we present images of the GEM detector, the results of tests with ^{60}Co, AmBe sources and our neutron beam, and a comparison between the proposed fast neutron GEM detector and a fast neutron ^{238}U fission chamber we purchased. One of the advantages of the GEM detector over the fission chamber is the fact that it provides the x-y position information of the neutrons.

Cybele Jewett
University of California at Berkeley

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