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Measuring the Response of Bubble Neutron Detectors Using DT Accelerators[1] J. LIPTAC, University of Washington, R.K. FISHER, General Atomics, E. MORSE, A. BELIAN, University of California, Berkeley — Bubble neutron detectors appear to be an attractive approach for measuring the high energy neutron tail created by knock-on alpha-fuel ion collisions in a DT plasma. Measurement of the DT neutron energy spectrum above ~ 16 MeV will provide diagnostic information on the spatial and energy distributions of confined alpha particles in the plasma core of ITER. Bubble detectors are designed so that only neutrons above a selectable threshold energy can create a bubble. This poster describes measurements of the detector response as a function of neutron energy at accelerator neutron sources at Ohio University and at the Rotating Target Neutron Source at UC Berkeley, with the goal of measuring the actual detector thresholds. The small size of the alpha-induced neutron tail in a tokamak requires the detector response to neutrons with energies below threshold be $\leq 10^{-5}$ of the response 0.5 MeV above threshold.

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☐ Prefer Oral Session
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Special instructions: Student Session, immediately following A. Er

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