

LONGITUDINAL DRIFT EXPERIMENTS AT THE UNIVERSITY OF MARYLAND ELECTRON RING*

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An understanding of the longitudinal behavior of intense beams is key for the successful design of a heavy ion fusion driver. Experiments to improve this understanding are now underway at the University of Maryland Electron Ring (UMER), an intense, low energy (10 keV, 100 mA) dispersive beam transport system now nearing completion. UMER features a sophisticated set of diagnostics, which include the capability to measure the transverse beam profile at different positions (times) along the bunch and the ability to produce various longitudinal beam distributions from the electron gun. In preparation for multi-turn operation, longitudinal experiments are concentrating on the free expansion of the beam. In this paper, we describe these experiments and future plans for UMER.

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