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Measuring Fast Ion Losses in a Reversed Field Pinch Plasma P.J. BONOFIGLO, J.K. ANDERSON, A.F. ALMAGRI, J. KIM, Univ of Wisconsin, Madison, J. CLARK, Florida Agricultural and Mechancial Univ, W. CAPECCHI, S.H. SEARS, Univ of Wisconsin, Madison — The reversed field pinch (RFP) provides a unique environment to study fast ion confinement and transport. The RFP's weak toroidal field, strong magnetic shear, and ability to enter a 3D state provide a wide range of dynamics to study fast ions. Core-localized, 25 keV fast ions are sourced into MST by a tangentially injected hydrogen/deuterium neutral beam. Neutral particle analysis and measured fusion neutron flux indicate enhanced fast ion transport in the plasma core. Past experiments point to a dynamic loss of fast ions associated with the RFP's transition to a 3D state and with beam-driven, bursting magnetic modes. Consequently, fast ion transport and losses in the RFP have garnered recent attention. Valuable information on fast-ion loss, such as energy and pitch distributions, are sought to provide a better understanding of the transport mechanisms at hand. We have constructed and implemented two fast ion loss detectors (FILDs) for use on MST. The FILDs have two, independent, design concepts: collecting particles as a function of $v_\perp$ or with pitch greater than 0.8. In this work, we present our preliminary findings and results from our FILDs on MST.
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