

Neutral beam ion losses due to Alfvén eigenmode activity in the DIII-D tokamak

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Abstract. A Fast Ion Loss Detector (FILD) commissioned during the 2010 experimental campaign at DIII-D observes coherent losses at frequencies corresponding to toroidal and reversed shear Alfvén eigenmodes in neutral beam heated discharges. The conditions under which these losses are observed are similar to those from previous experiments in which Alfvén eigenmode induced transport led to a depletion in the core energetic ion density, but for which loss measurements were unavailable. Confirming the existence of coherent losses due to Alfvén eigenmode activity supports the inference that the previous core depletion results are due to this mechanism. Measurements of the lost ion energies and pitch angles from the FILD aid in the determination of the mode/ion interaction phase-space.