Modeling of magnetic flutter induced transport in DIII-D

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Abstract. Applying non-axisymmetric three-dimensional (3D) magnetic fields in the DIII-D tokamak can produce High confinement (H-)mode plasmas where the edge localized modes (ELMs) are suppressed. One typical feature of these ELM-suppressed plasmas is a large electron thermal diffusivity at the top of the pedestal. It is shown here that the magnetic flutter model of plasma transport predicts this feature reasonably accurately. One key ingredient for evaluating the flutter model is to calculate the most realistic plasma response to the 3D fields, including flow screening at rational surfaces, for which the M3D-C1 two-fluid MHD code is being used.