Abstract Submitted
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Integration of MHD Stability and Transport to Model DIII-D Pedestal Physics and ELMs[1] G. LI, ASIPP, L.L. LAO, P.B. SNYDER, H.E. ST. JOHN, M.S. CHU, R.J. GROEBNER, G.M. STAEBLER, J.E. KINSEY, GA, J.M. PARK, M. MURAKAMI, ORNL, J.M. JEON, ORISE, W. GUO, Q. REN, ASIPP — Improving the predictive capability to model the H-mode edge pedestal is one of the critical tasks for tokamaks and ITER. Typically transport equations are solved with boundary conditions imposed well inside the pedestal. To accurately model the pedestal region, it is necessary to couple an edge stability code like ELITE to a transport model that is valid in the pedestal region. Our recent efforts in this area to model DIII-D pedestal height and edge localized modes (ELMs) is presented including the development of a simplified ELM-crash model to relax the edge J and temperature profiles. The edge electron and ion transport coefficient are set to large values based on the shape of the unstable eigenfunction from ELITE, if the edge P' exceeds the stable limit. Without an edge relaxation model, the predicted edge J tends to significantly exceed the experimental values. The effects due to ELMs will be discussed.

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