

Abstract Submitted
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ASDEX Upgrade contribution to disruption studies for ITER
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GRADE TEAM — Plasma disruptions represent a hazard for the structural integrity
of ITER. The contribution of the existing tokamaks to this project consists in re-
fining the characterization of the disruption loads and their extrapolation, on the
basis of physical models, and in learning to predict and mitigate disruptions. The
ASDEX Upgrade research program covers these specific topics and this contribution
reports on significant progress made in these areas. (I) The formation and evolution
of the halo region is analyzed with MHD-transport codes and extrapolation to ITER
is discussed. (II) Discriminant analysis is applied to each disruption group in order
to determine the most significant plasma variables, which allow for classification,
and is being used to discern between stable and pre-disruptive plasma states. (III)
Progress has been made with MGI in attaining an effective electron density equiva-
lent to 24 % of the critical one (necessary for the collisional suppression of runaway
electrons) and in studying the redistribution of the injected gas in the plasma.

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