

Abstract Submitted
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**Dependence of Magnetic Perturbation Induced Fast Ion Losses
on Perturbation Spectrum and Plasma Response in the ASDEX Upgrade
and DIII-D Tokamaks¹** K. GAGE, UCI, J. GALDON-QUIROGA, B. TAL, G.

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The impact of externally applied magnetic perturbations (MPs) on fast-ion losses has
been investigated using the light ion beam probe (LIBP) technique[1] in the ASDEX
Upgrade (AUG) and DIII-D tokamaks. This allows for experimental inference of the
orbit displacement for first orbit losses. In AUG, the displacement against a series of
applied spectra has been studied by varying the phase between the upper and lower
MP coils. Experimentally, a minimum in the orbit displacement was found for a
phase of 50. This is offset from the minimum of the plasma boundary displacement,
suggesting losses could be disentangled from ELM mitigation. Experiments at DIII-
D focus on the impact of the plasma response over large number of shots, where the
plasma response was varied by a scan in the plasma β . In this case, rigid rotation
of the MPs was applied in an n=1 configuration. Measurements show an increase
in displacement with the plasma response. [1] X.Chen *et al*, Rev Sci Instrum **85**,
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