

Abstract Submitted
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Microtearing instability in ITER* KING-LAP WONG, DAVID MIKKELSEN, ROBERT BUDNY, JOSHUA BRESLAU, PPPL — Microtearing modes are found to be unstable in some regions of a simulated ITER H-mode plasma [1] with the GS2 code [2]. Modes with $k\rho_s > 1$ are in the interior ($r/a \sim 0.65-0.85$) while longer wavelength modes are in the pedestal region. This instability may keep the pedestal within the peeling-ballooning stability boundary [3]. Microtearing modes can produce stochastic magnetic field similar to RMP coils; they may have similar effects on ELMs by increasing the pedestal width. The possibility of using this technique for ELM mitigation in ITER is explored. We propose to use a deuterium gas jet to control the microtearing instability and the Chirikov parameter at the edge. Preliminary evaluation of its effectiveness will be presented and the limitations of the GS2 code will be discussed based on our understanding from NSTX [4]. *This work is supported by USDoE contract DE-AC02-09CH11466.

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