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Pellet Fueling of ELM Mitigated ITER Baseline Scenario Plasmas on DIII-D*[1] L.R. BAYLOR, Oak Ridge National Laboratory — ITER has been designed to employ HFS pellet fueling to operate at high density using pellets that produce less than a 10% density perturbation and that penetrate to just beyond the top of the pedestal. DIII-D ITER-like plasmas with ELM mitigation provided by either pellet ELM pacing or RMPs have been fueled with small shallow penetrating HFS pellets. In DIII-D, large natural ELMs dramatically reduce the effective fueling efficiency of the HFS pellets to nearly 0 within the time scale of a few large ELMs. In the ELM paced plasmas, the pellets trigger ELMs that are no more intense than the paced ELMs and the resulting fueling efficiency is >80%. In RMP ELM mitigated plasmas, the efficient fueling from HFS pellets results in pedestal collisionality increases that can reduce the ELM mitigation. New experiments have shown that edge ECH can decrease pedestal collisionality and will be combined with the HFS pellets to better mimic the ITER fueling scenario. These fueling results from pellet pacing and RMP ELM mitigation will be presented and implications for ITER discussed.

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