THE SIMULATIONS ON THE CONTROL OF ELM AND EDGE TURBULENCE BY RF WAVES IN EAST H-MODE DISCHARGES

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➢ 6-field 2-fluid model in BOUT++ code are developed to study the direct RF effects on ELM [1,2].
➢ LHWs drives HCF in SOL. HCF is added as the magnetic flutter in the simulations
➢ HCF decreases the amplitude of the fluctuation

➢ Pedestal turbulence enhancement by LHW is found to suppress ELM [3]
➢ A threshold of the amplitude of PCM is found to mitigate ELM.
➢ The nonlinear wave-wave interactions change the phase coherent time, leads to the ELM mitigation [4].

➢ RF sheath [5] leads to the large flow shear in SOL
➢ This shear can suppress ELM effectively
➢ Only a window of the RF potential is available for ELM suppression