

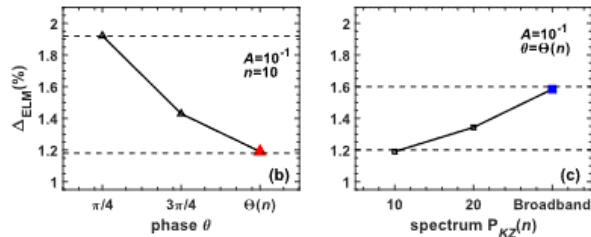
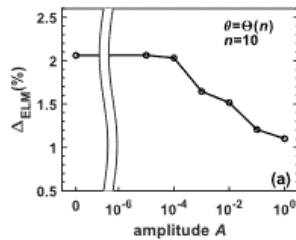
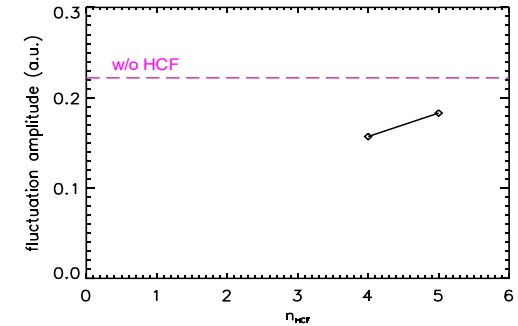
THE SIMULATIONS ON THE CONTROL OF ELM AND EDGE TURBULENCE BY RF WAVES IN EAST H-MODE DISCHARGES

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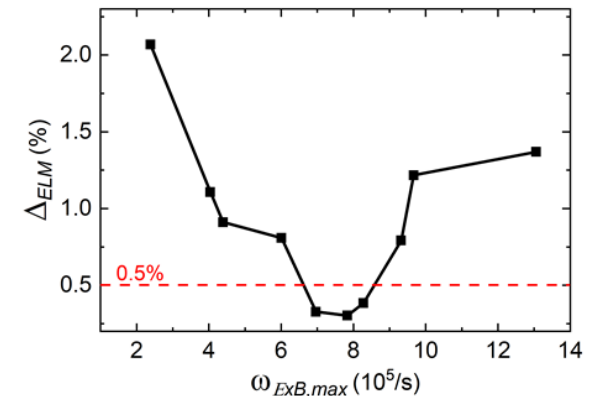
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- 6-field 2-fluid model in **BOUT++** code are developed to study the direct RF effects on ELM [1,2].
- LHWS drives HCF in SOL. HCF is added as the magnetic flutter in the simulations
- HCF decreases the amplitude of the fluctuation



- 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

[1] T.Y. Xia et al., Nucl. Fusion 53 (2013) 073009.

[2] T.Y. Xia et al., Nucl. Fusion 59 (2019) 076043

[3] G.L. Xiao et al. Nucl. Fusion 59 (2019) 126033

[4] P.W. Xi et al., Phys. Rev. Lett. 112 (2014) 085001.

[5] Gui B. et al Nucl. Fusion 58 (2018) 026027