EX/P2-54

(N)TM Onset by Central EC Power Deposition in FTU and TCV tokamaks

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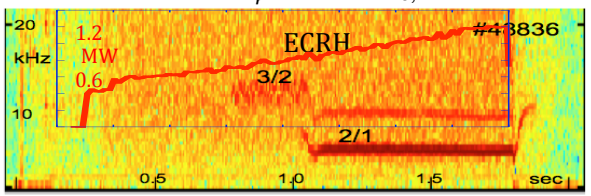
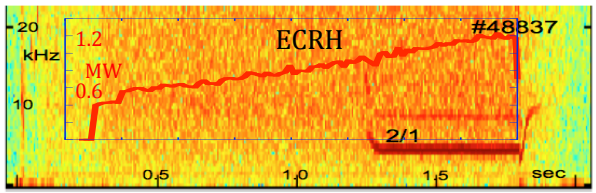
- (N)TM Onset (TCV, w/o ST, ELMs) and amplification (FTU with weak modes) by central EC
- Understanding of main driving mechanisms
- TCV: Mode onset mainly depends on the strength of co-ECCD => change stab. param. Δ'_0
- FTU: Mode amplification by increased bootstrap effect and co-ECCD torque on freq. increase

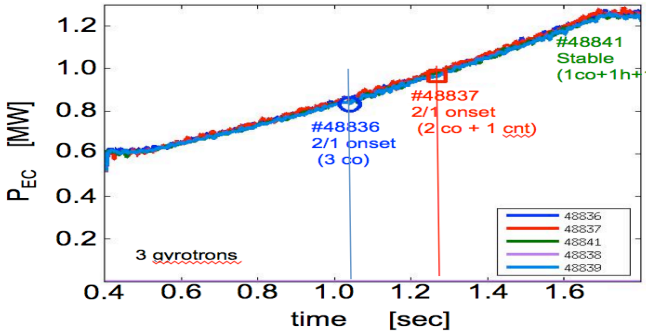
TCV *: -115 kA, B_ϕ=-1.4 T, $n_{e,l}$=1.6 10^{19} m^{-3}*



early onset with
3 gyrs. co-ECCD

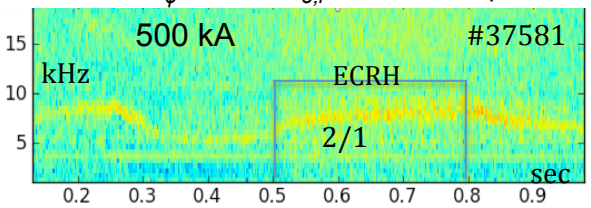


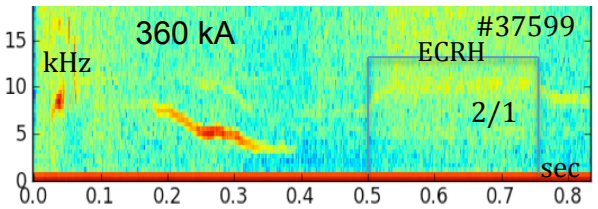
later onset with
2 gyrs,co-ECCD
1 gyr. cnt-ECCD



no onset with
1 gyr. co-ECCD
1 gyr. ECH
1 gyr. cnt-ECCD

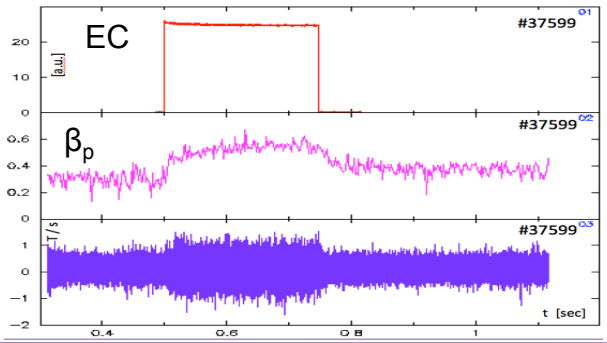
FTU *: B_ϕ=5.3 T, $n_{e,l}$=4 $10^{19}$$m^{-3}$ (#37599)-6 10^{19} m^{-3} (#37581)*





2/1 in counter-I_p direction

freq. increase due to the co-ECCD torque



#37599

2/1 amplification driven by BS
Increased effect