

F14 – TM excitation by EC (S. Nowak, E. Alessi)

Effect of on-axis co-/cntr-ECCD on (N)TM onset/amplification at 360 – 700 kA

Gy1 (400 kW => 300 ms) & Gy4 (300 kW => 500 ms) on Port 8 (RT system)

Pulse list

1) Zero at 5.3 T

- 2) 5.3 T / 500 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, ohmic, w/o sawteeth if possible
- 3) 5.3 T / 500 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, Gy1 & Gy4 on-axis in co-ECCD (*ref. #37581*) for 150 ms and then change the Gy4 (150ms left) direction to reach the 2/1 surface and sweeping around this location to suppress the mode
- 4) 5.3 T / 500 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, Gy1 & Gy4 on-axis in cntr-ECCD

as 2) -3) -4) for 700 kA

- 5) 5.3 T / 700 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, ohmic, w/o sawteeth if possible
- 6) 5.3 T / 700 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, Gy1 & Gy4 on-axis in co-ECCD (*ref. 3*)) for 150 ms and then change the Gy4 direction to reach the 2/1 surface and sweeping around this location to suppress the mode
- 7) 5.3 T / 700 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, Gy1 & Gy4 on-axis in cntr-ECCD

as 2) -3) -4) for 360 kA

- 8) 5.3 T / 360 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, ohmic, w/o sawteeth if possible
- 9) 5.3 T / 360 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, Gy1 & Gy4 on-axis in co-ECCD (*ref. #37599*) for 150 ms and then change the Gy4 direction to reach the 2/1 surface and sweeping around this location to suppress the mode.
- 10) 5.3 T / 360 kA/ $n_e \sim 0.4-0.5 \cdot 10^{20} \text{ m}^{-3}$, Gy1 & Gy4 on-axis in cntr-ECCD

Requirements

$n_{av} (10^{20} \text{ particles m}^{-3})$	0.4 – 0.5
$B_{min} - B_{max} (T)$	5.3
$I_{min} - I_{max} (kA)$	360 – 700
ECRH (kW)	700
LH (kW)	no
Pellet	no
Special requirements	no
Essential diagnostics	Electron density and temperature profiles D _e , Mirnov coils

Number of required good pulses 10