EUROfusion

Topic 21: TCV experimental plan for Week 24

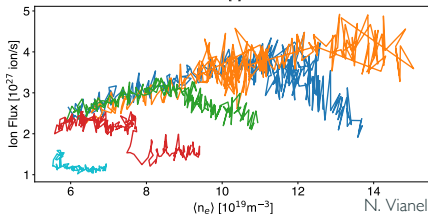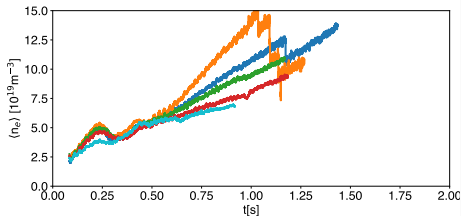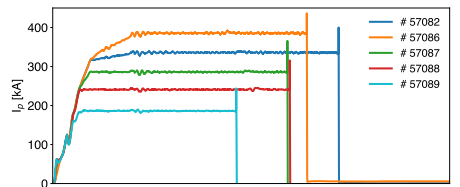N . Vianello and V. Naulin

30 March 2017

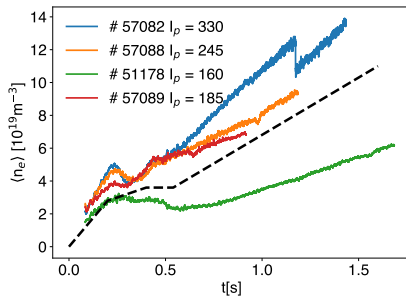# Taking advantage of already performed experiment

✓ Topic 25 already performed a current scan at constant B_ϕ but as far as I checked we don't have fast reciprocating probe data for all the scan To be confirmed by Cedric

✓ Furthermore the density was not optimized for lower current, as it start to high

Proposed density ramp

✓ I propose to perform with the same density ramp at all the current as shown in dashed line. Less demanding for the higher current case we could end up into disruption for the lower current case

Proposed experimental plan

For the first week of operation we propose to perform only L-Mode shot and we have accommodated the low collisionality request from cedric

1. Shape from 57088, I_p = 245 kA, Reverse B_t, density ramp from Line Average Density = 3.8e19 @ 0.5 s to 11e19 @ 1.6s, Bt = 1.4T. Plunge @ 0.65, 1.52
2. Repeat # 1 with I_p=330 kA Bt=1.4T, same density ramp, same timing for plunges
3. Repeat # 1 with I_p=180 kA, Bt=1.4T, same density ramp, same timing for plunges
4. Repeat # 1 with q95=2.44 as # 2, adjust Bt consequently (Bt = 1.02T)
5. Repeat # 3 with q95=2.44 as # 2, adjust Bt consequently (Bt=0.8T)
6. Shape and current from # 1. Stop puffing once the divertor is formed to get low collisionality case
7. Repeat # 6 with density feedback controlled at value 50 % higher then # 6.
8. Repeat density ramp of Shot # 2 in DN configuration
9. Repeat density ramp of Shot # 3 in DN configuration
10. Repeat # 1 in forward field
11. Repeat # 3 in forward field