

Topic 2 I: TCV experimental plan for Week 24

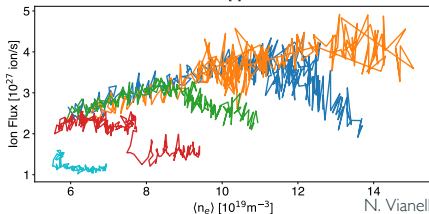
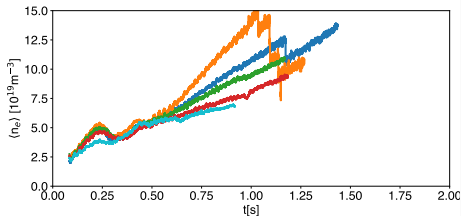
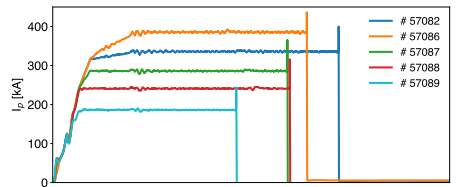
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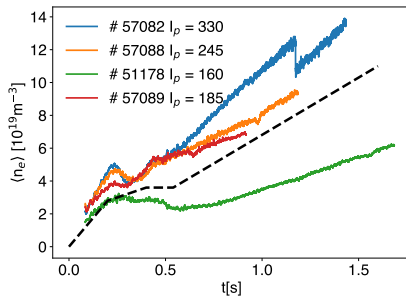


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Taking advantage of already performed experiment



- ✓ 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 starts to high



- ✓ The proposal is to use the same density ramp for all the currents as shown in dashed line. Less demanding for the higher current case. Risk to end with disruption for the lower current case



For the first week of operation we propose L-mode shots only. We have accommodated the low collisionality request from Cedric. Shots 1-3 I_p scan at constant toroidal field. Shots 1, 4 and 5 I_p scan at constant q_{95} to be compared with analogous experiments in AUG and MAST-U. Shots 6-7 Low collisionality scan. Shots 8-9 DN current scan: this will be compared directly with Mast-U which will run predominantly in DN configuration. Shot 10-11 Current scan in forward field to check the role of $\nabla \times B$ direction.

1. Shape from 57088, $I_p = 245$ kA, Reverse B_t , density ramp from Line Average Density = $3.8e19$ @ 0.5 s to $1.1e19$ @ 1.6s, $B_t = 1.4T$. Plunge @ 0.65, 1.52
2. Repeat # 1 with $I_p=330$ kA $B_t=1.4T$, same density ramp, same timing for plunges
3. Repeat # 1 with $I_p=180$ kA, $B_t=1.4T$, same density ramp, same timing for plunges
4. Repeat # 1 with $q_{95}=2.44$ as # 2, adjust B_t consequently ($B_t = 1.02T$)
5. Repeat # 3 with $q_{95}=2.44$ as # 2, adjust B_t consequently ($B_t=0.8T$)
6. Shape and current from # 1. Stop puffing once the divertor is formed to get low collisionality case. ECRH ramp from 0.9s (150 kW–500 kW)
7. Repeat # 6 with intermediate density value between # 6 and #1 density at 0.65s.
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