

Session Report

OP2.3/SOII-5 : NBI+ECRH Particle Transport

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Progress



- Difficult start, but generally quite successful towards the end.
- High complexity due to switching NBI vs ECRH. Recommendations:
 - 1) Wait for NBI, then run ECRH afterwards.
 - 2) Don't change between NBI heating and blips in the last moment.
- Delays due to inserted programs. "just one shot" --> "well... two and with a pulse train before"

Progress



- Basically completed all prio 1 proposals and a lot of the prio 2.

ID	Shot	Desc	Ref	Sources	ne	Config	From proposal
110	20250227.069	One source NBI peaking.	OP2.2/SOII-6:110	S8	8	KJM008-2x20	thir_009
120	20250227.071						
120	20270227.076	Density scan. 4E19. 2 sources NBI. (+extend with oth	OP2.2/SOII-6:150	S7+S8+S3+S4	4	KJM008-2x20	thir_009, sban_00
130	20250227.075	Density scan. 5E19. 2 sources NBI.	-	S7+S8	5	KJM008-2x20	thir_009
140	20250227.048	Density scan. 6E19. 2 sources NBI.	-	S7+S8	6	KJM008-2x20	thir_009
150		Density scan. 7E19. 2 sources NBI.	OP2.2/SOII-6:160	S7+S8	7	KJM008-2x20	thir_009
180		Fe LBO into peaking. 2 sources	OP2.2/SOII-6:180	S7+S8	8	KJM008-2620	thir_009
190		? LBO into peaking. 2 sources	OP2.2/SOII-6:180	S7+S8	8	KJM008-2620	thir_009
200	20250227.080	Reintroduction. t = 5.3s, 2MW. Repeat from OP2.1. Best with b-		S7+S8	8	KJM008-2620	thir_015
200	20250227.082	#200 with 1MW ECRH		S7+S8	8	KJM008-2620	thir_015
210	20250227.062	Reintroduction time scan t=6.5, 2MW, (modulated HF	OP2.2/SOII-6:200	(S7+S8) or (S3+S4)	8	KJM008-2620	thir_015
220	20250227.070	Reintroduction time scan t=4.5, 1MW, (modulated HF 667Hz, f	OP2.2/SOII-6:210	(S7+S8) or (S3+S4)	8	KJM008-2620	thir_015
230		Reintroduction time scan t=5.9, 2MW, (modulated HF 667Hz, f	OP2.2/SOII-6:220	(S7+S8) or (S3+S4)	8	KJM008-2620	thir_015
240		Reintroduction time scan t=6.1, 2MW, (modulated HF 667Hz, f	OP2.2/SOII-6:230	(S7+S8) or (S3+S4)	8	KJM008-2620	thir_015
270		Reintroduced O2 modulation 17Hz, 25% amp 67% dL	OP2.2/SOII-6:350	(S7+S8) or (S3+S4)	8	KJM008-2620	gawe_040
400	20250227.079	Reduce a/Ln by increasing edge ne with gas puff. R	OP2.2/SOII-6:400	(S7+S8) or (S3+S4)	8	KJM008-2620	daz_020
410		Scan gas puff level during pure NBI. Look at 150 and	OP2.2/SOII-6:410	(S7+S8) or (S3+S4)	8	KJM008-2620	daz_020
500	20250227.065,	4MW ECRH. Ramp ne 5 - 10e19 over 2 < t < 12s					
500	20250227.057	with S8 blips for Er 0.2 <t< 15s, 30ms, 5Hz		S8	5-10	KJM008-2620	fwa_020
510	(20250227.060)	Repeat 500 with ramp, 8 - 5e19 over 2 < t < 12s		S8	8-5	KJM008-2620	fwa_020
520		Repeat 500 with off-axis ECRH		S8	5-10	KJM008-2620	fwa_020
600		Off-axis ECRH with gas-puff modulation. >10s. Position 1.		-		KJM008-2620	golof_025
610		Off-axis ECRH with gas-puff modulation. >10s. Position 2.		-		KJM008-2620	golof_025
620		Off-axis ECRH with gas-puff modulation. >10s. Position 3.		-		KJM008-2620	golof_025
630		Off-axis ECRH with gas-puff modulation. >10s. Position 4.		-		KJM008-2620	golof_025
700		Changing ECRH parameters during pulse trains		-		KJM008-2x20	fwa_022
	20250227.055	Divertor loads with TC+CC				KJM008-2620	
	20250227.056	Divertor loads without TC+CC				KJM008-2620	
	20250227.067	Prad feedback				KJM008-2620	

← Will be covered tomorrow anyway

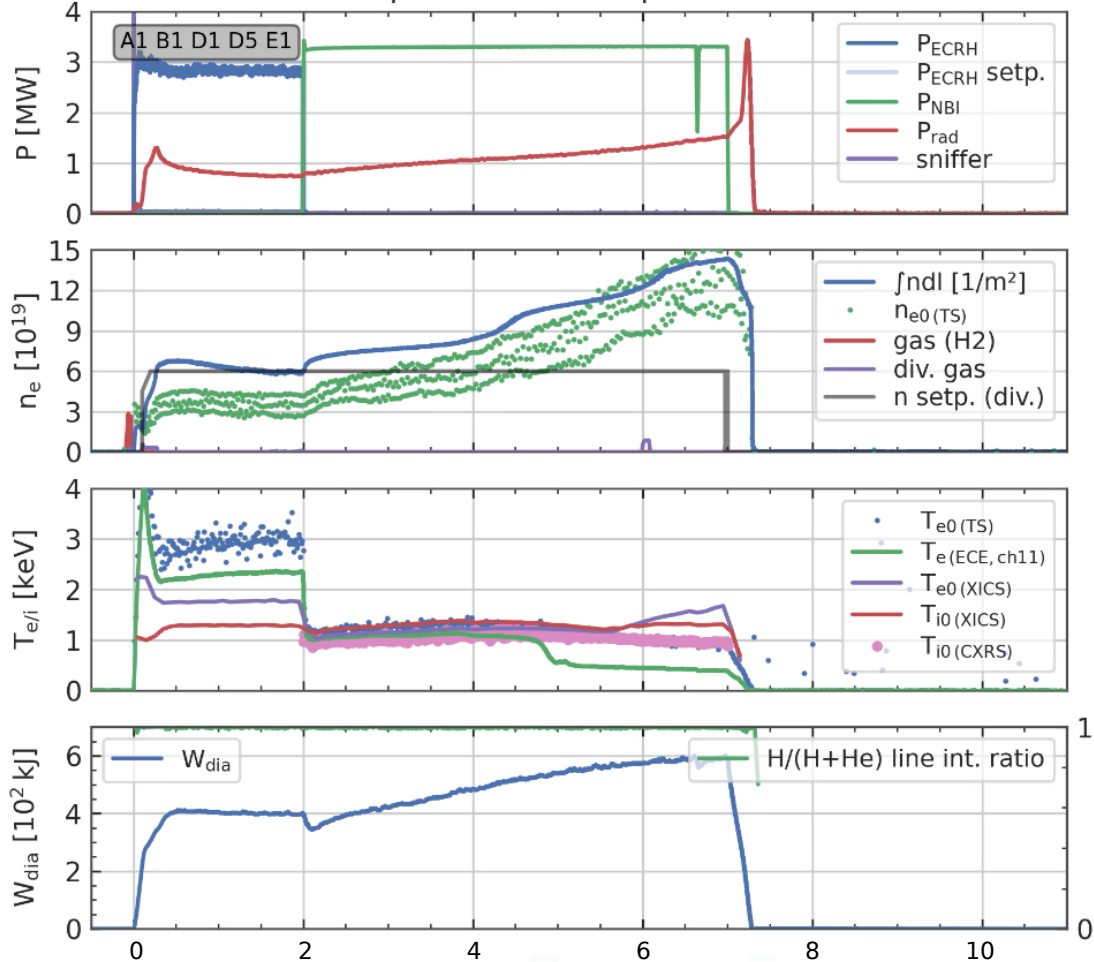
← Skipped as scan didn't seem to be doing anything

← Should be covered in a KJM session.

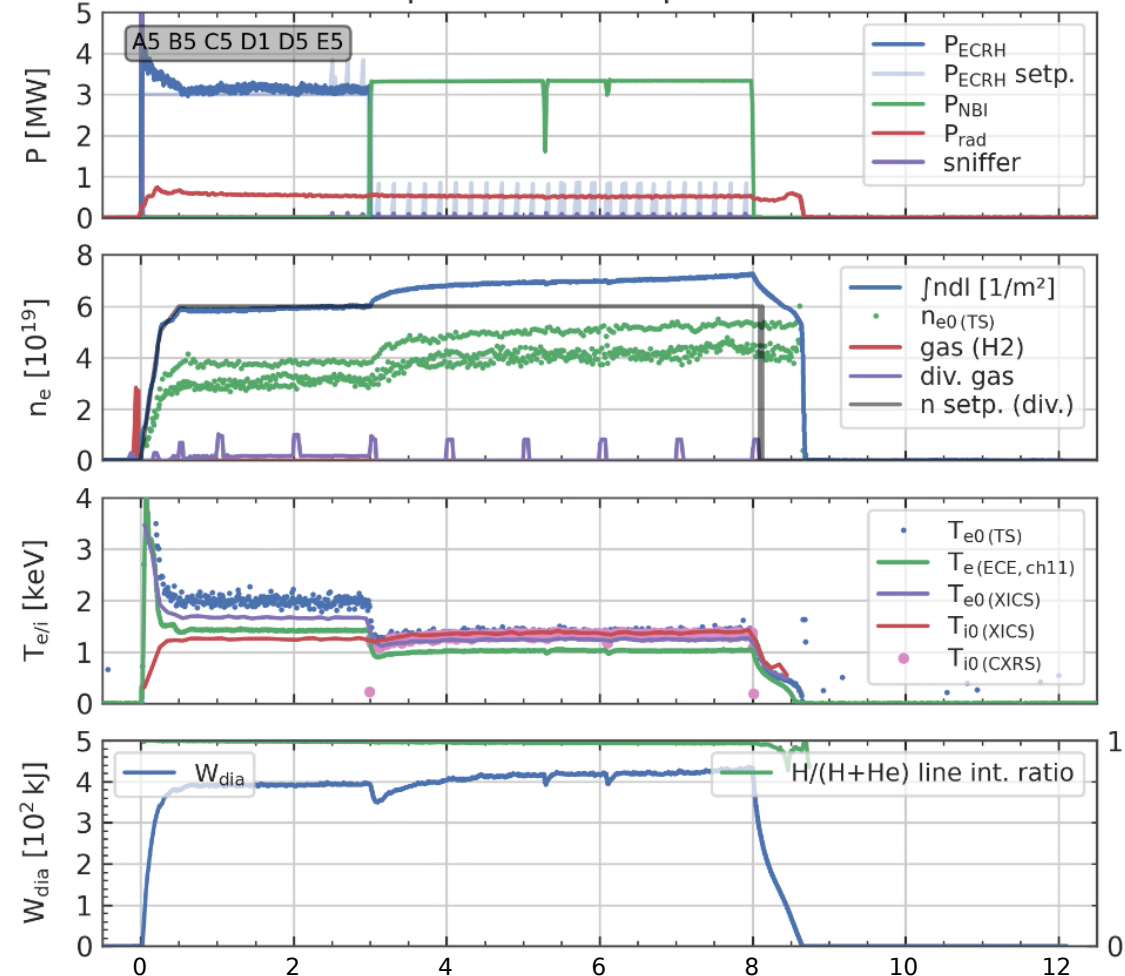
NBI peaking

- Finer start density scan for NBI peaking. Threshold seems to be higher than OP2.2: Profile effects??

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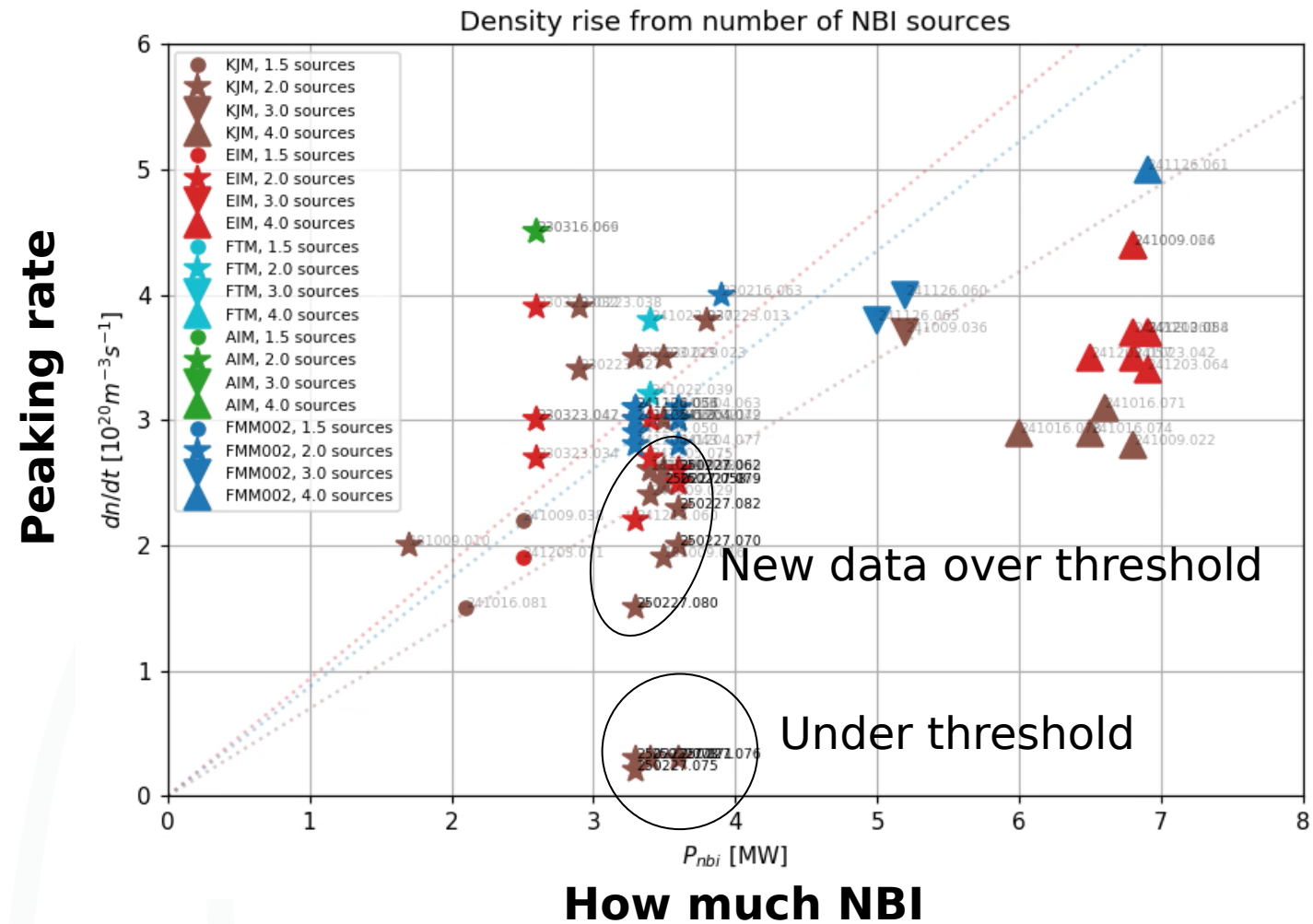


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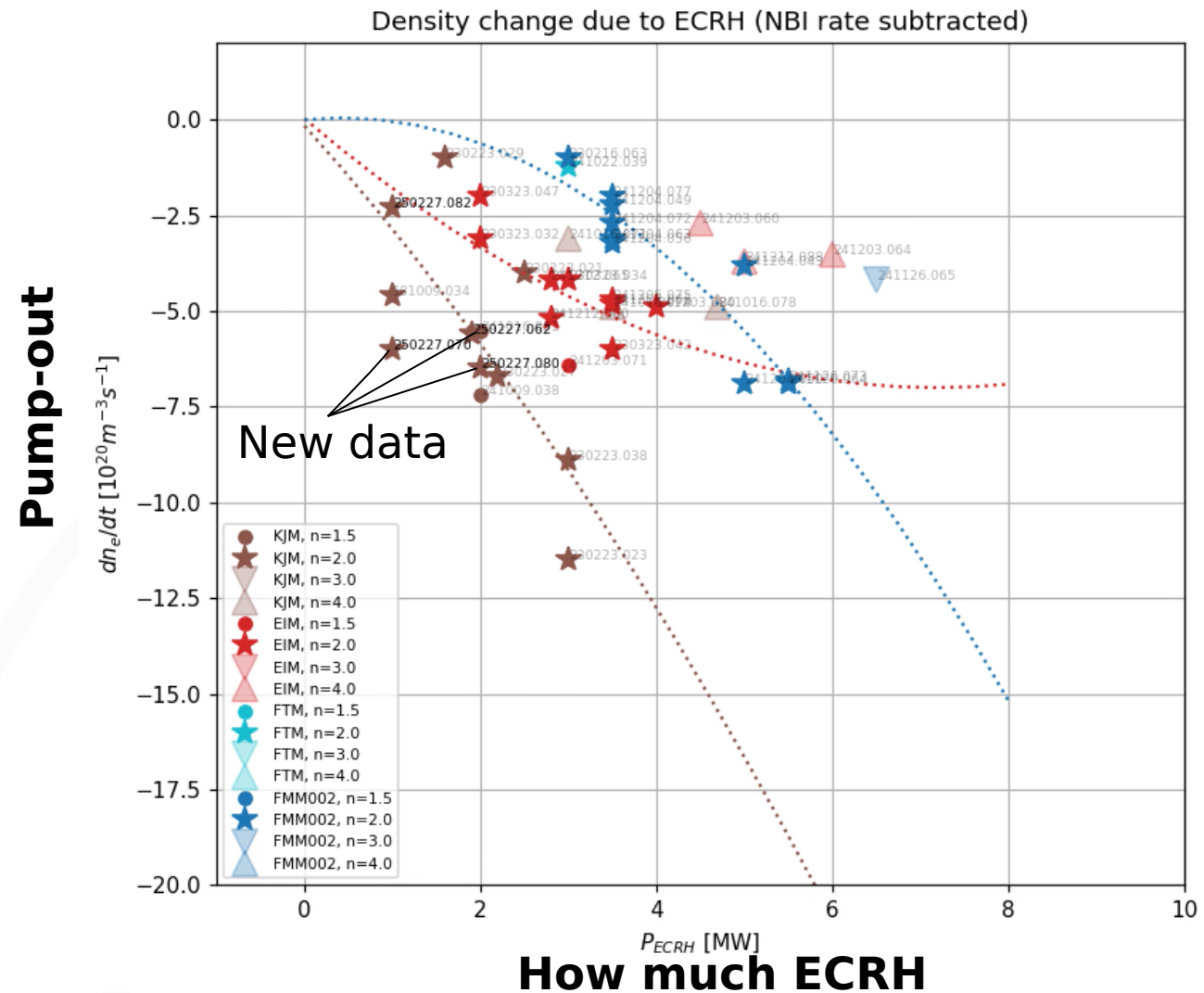
NBI peaking

- However, once started, the peaking rate roughly fits the trend:



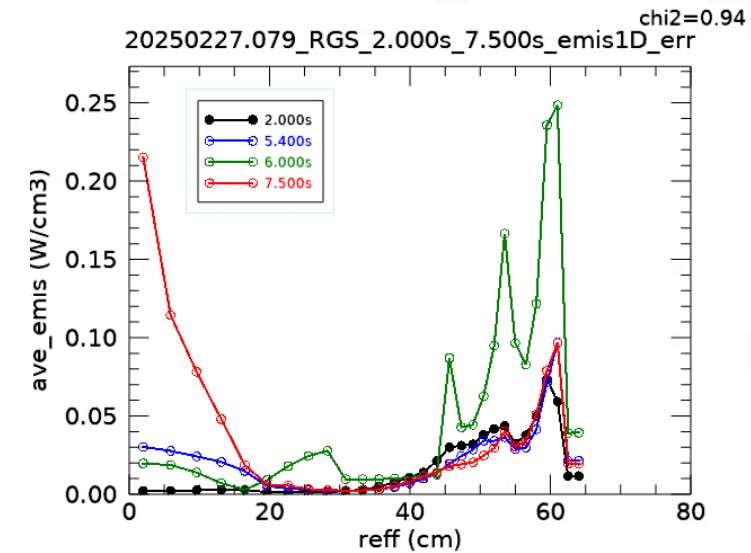
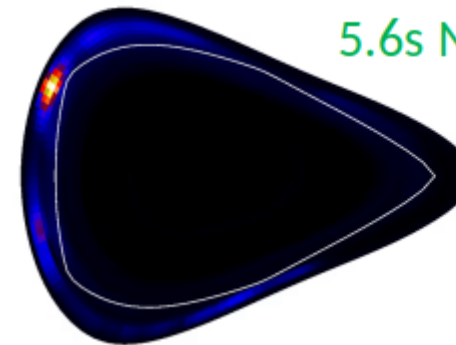
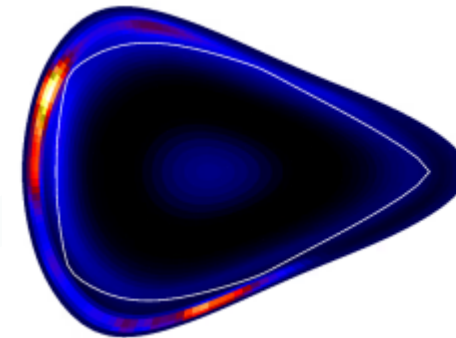
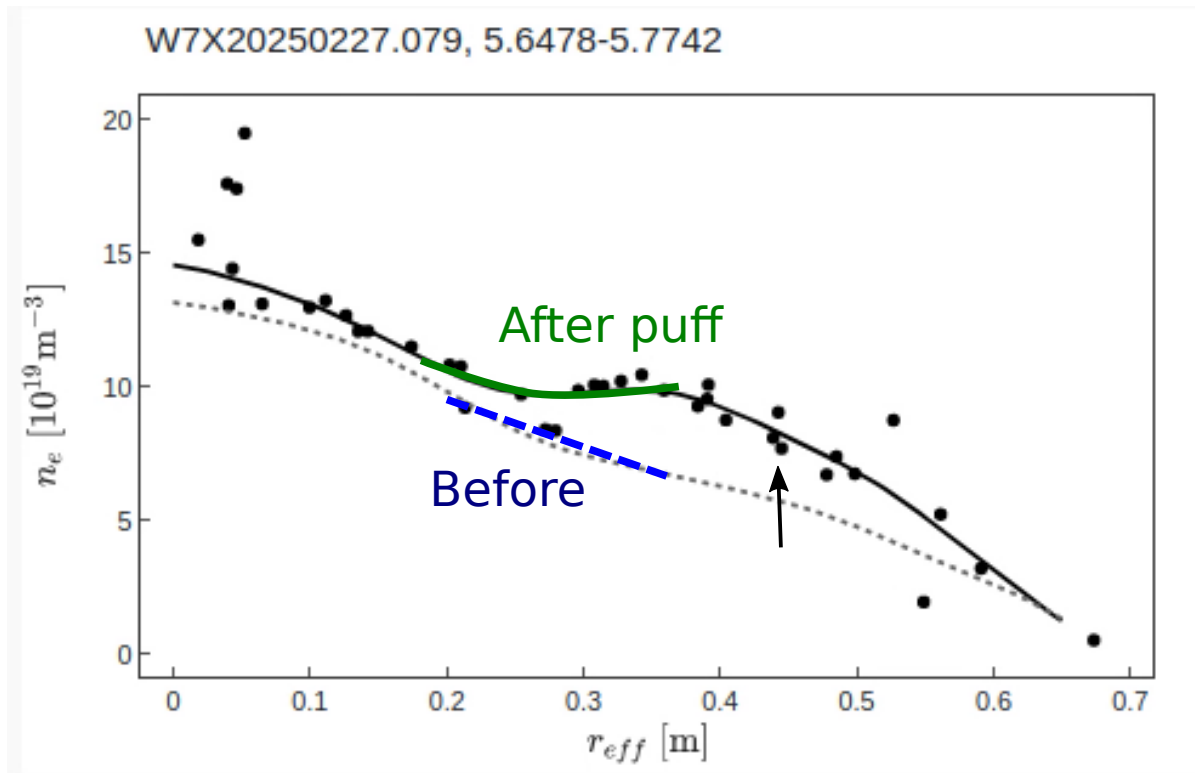
NBI peaking

- ECRH pump-out fits the existing 'trend' for KJM.



Density profile flushing

- daz_020: Flush out impurities by raising edge density with massive gas-puff.



Reduction of density gradient at \sim mid-radius temporarily increases transport and allows flush out of impurities.

