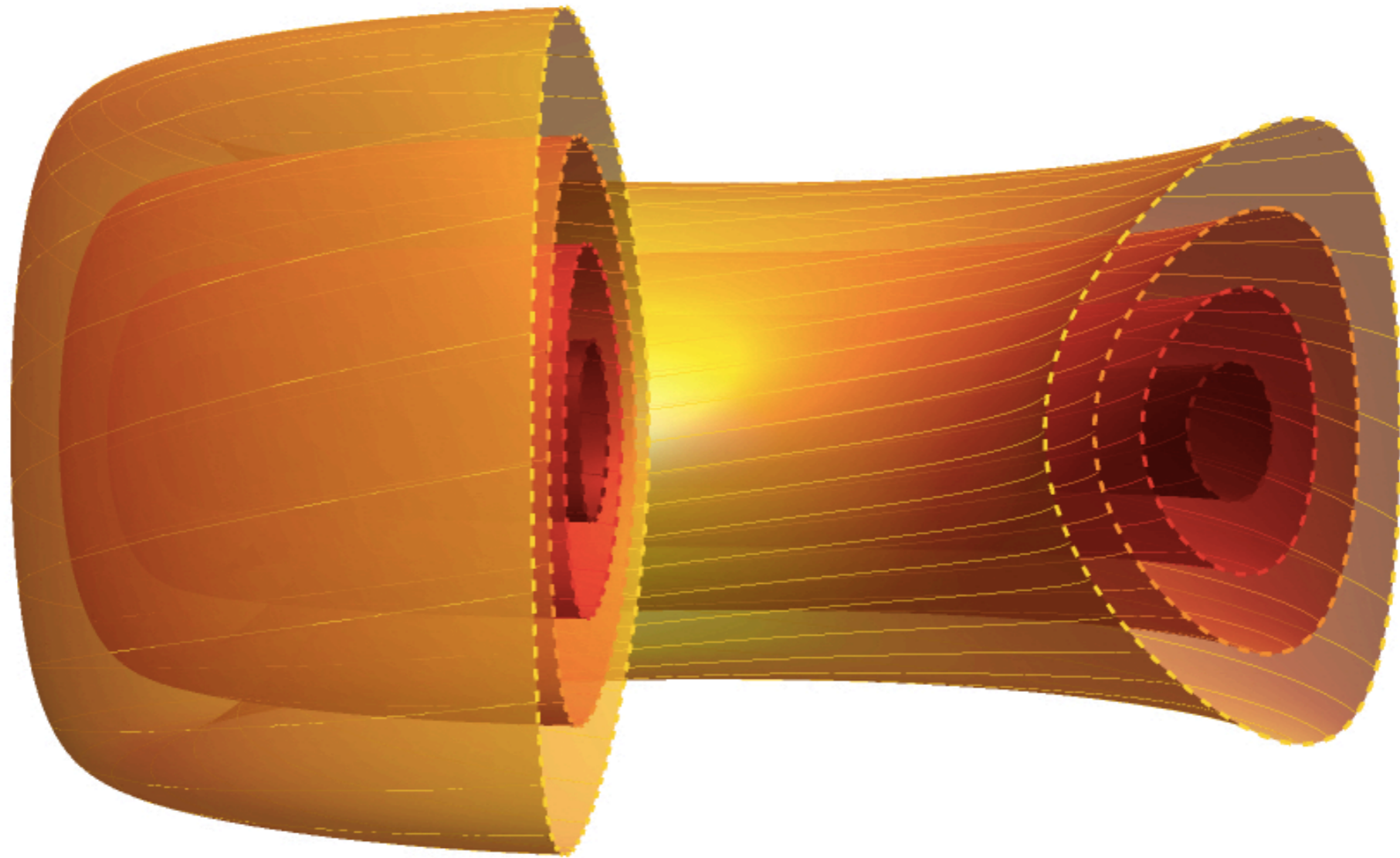


TSVV 2: Negative triangularity

September meeting



Justin Ball
28 September 2021

Agenda

- **General updates**
- Roundtable discussion with team members
- Team meeting scheduling and resources
- Comments, questions?

General updates

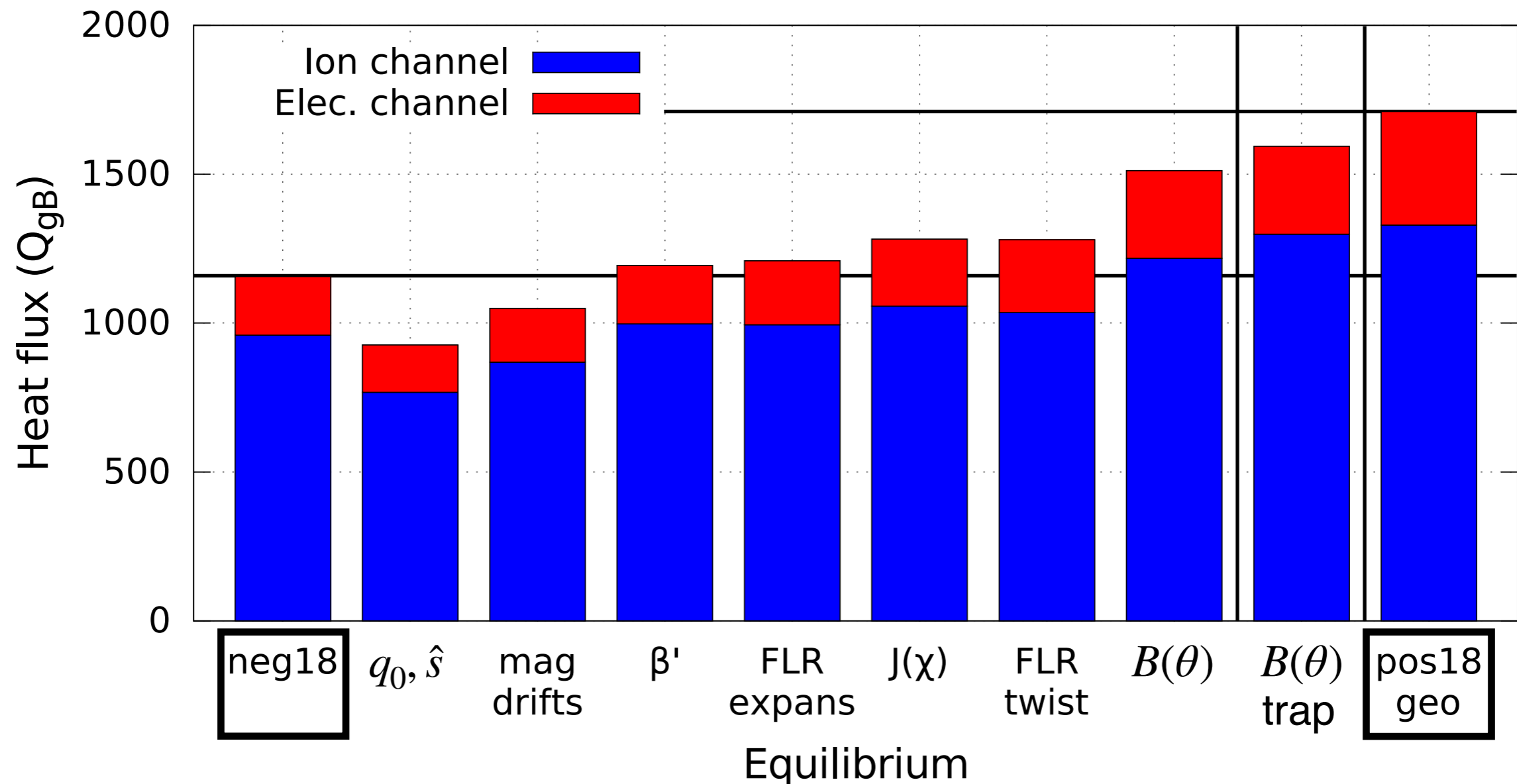
1. Scheduling our annual workshop for early December (?)
 - 20 minute talks per funded participant with additional contributions welcome
2. Giving an update to the EUROfusion scientific board tomorrow

Agenda

- General updates
- **Roundtable discussion with team members**
- Team meeting scheduling and resources
- Comments, questions?

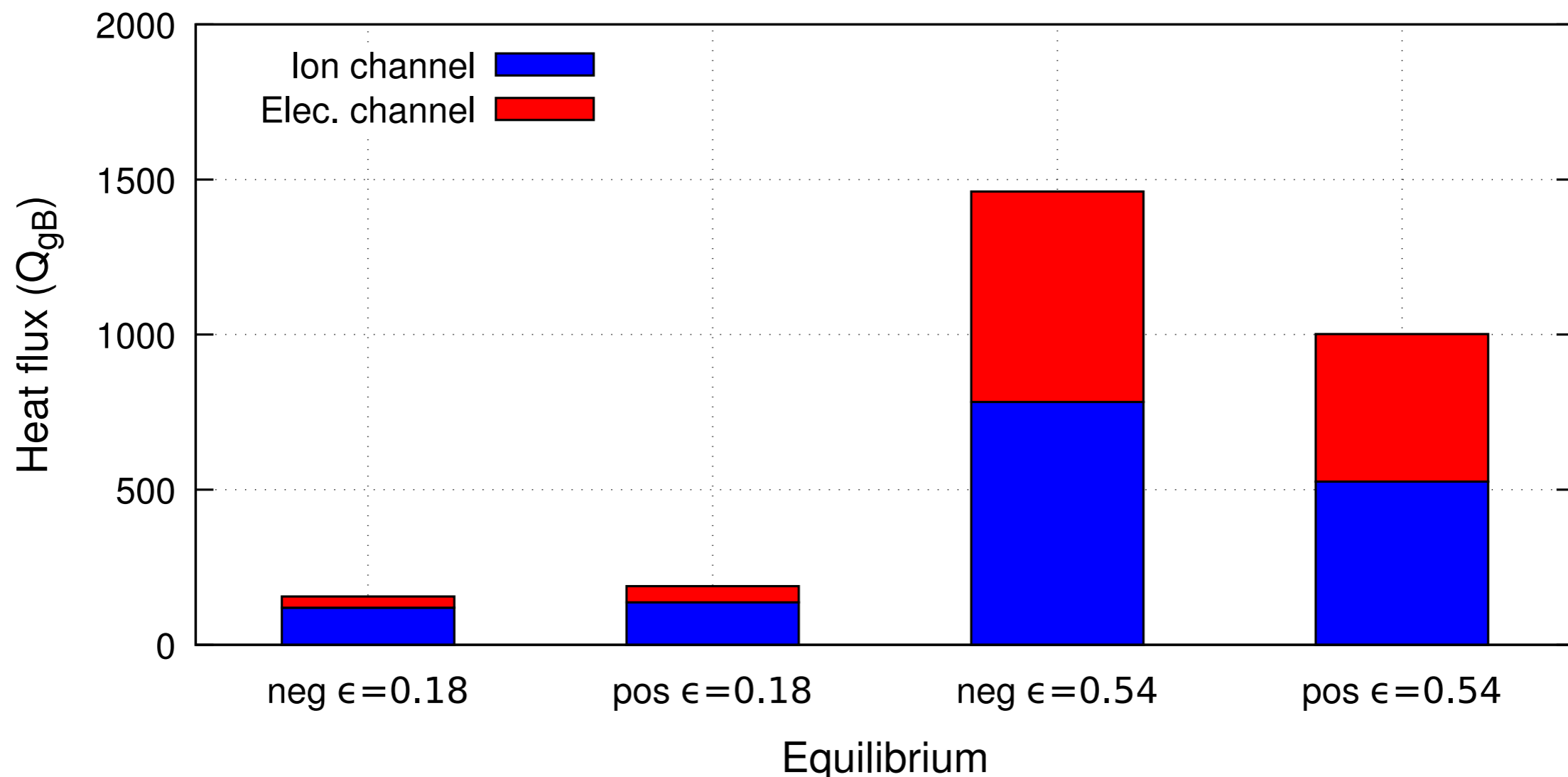
Effect of aspect ratio on confinement

- Past DEMO results indicated particle trapping (i.e. parallel acceleration term) is important factor distinguishing PT and NT



Effect of aspect ratio on confinement

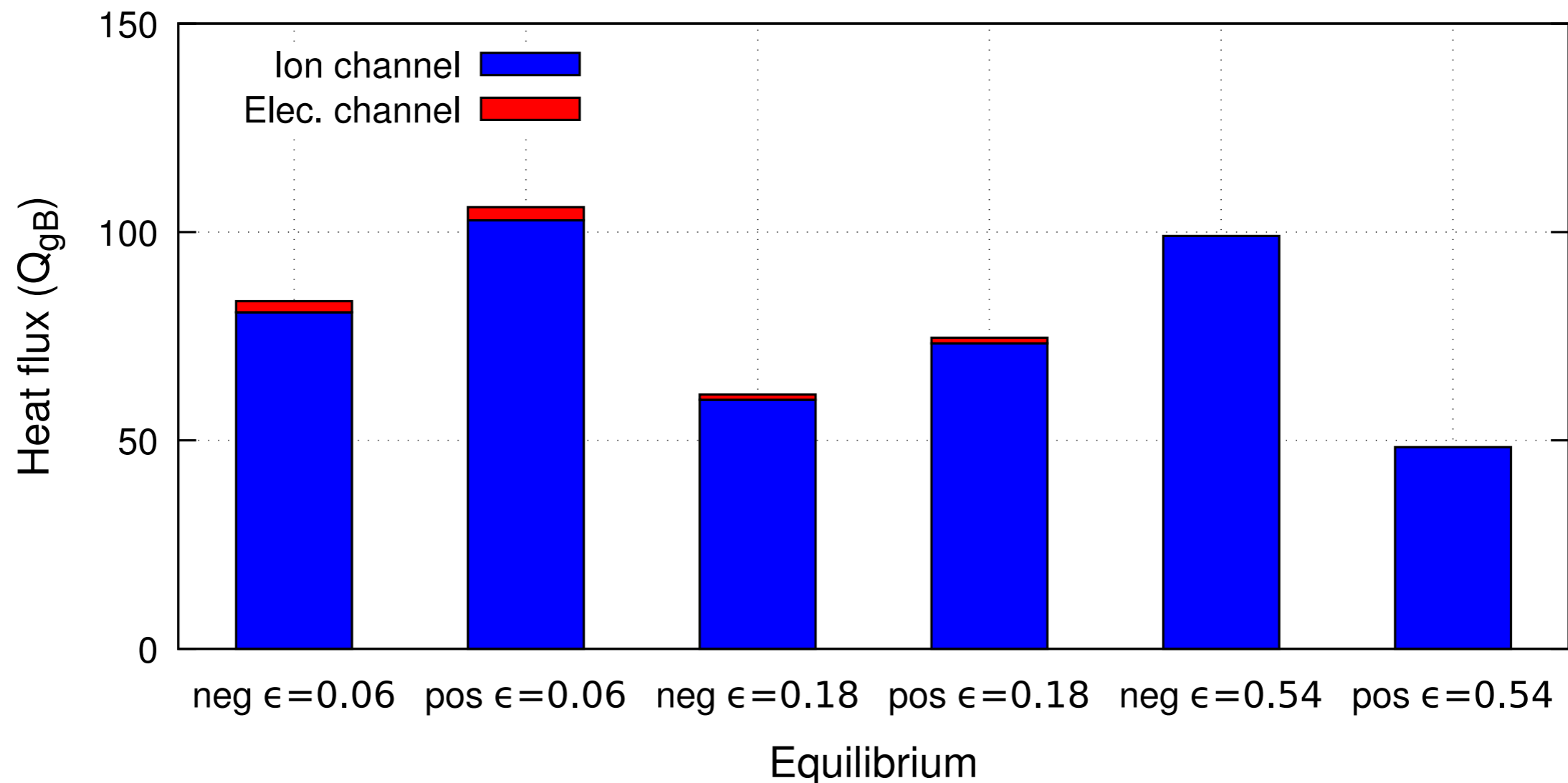
- Particle trapping should become more important for tighter aspect ratio, due to more trapped particles
- At tight aspect ratios, NT is not longer beneficial (for CBC parameters)



Effect of aspect ratio on confinement

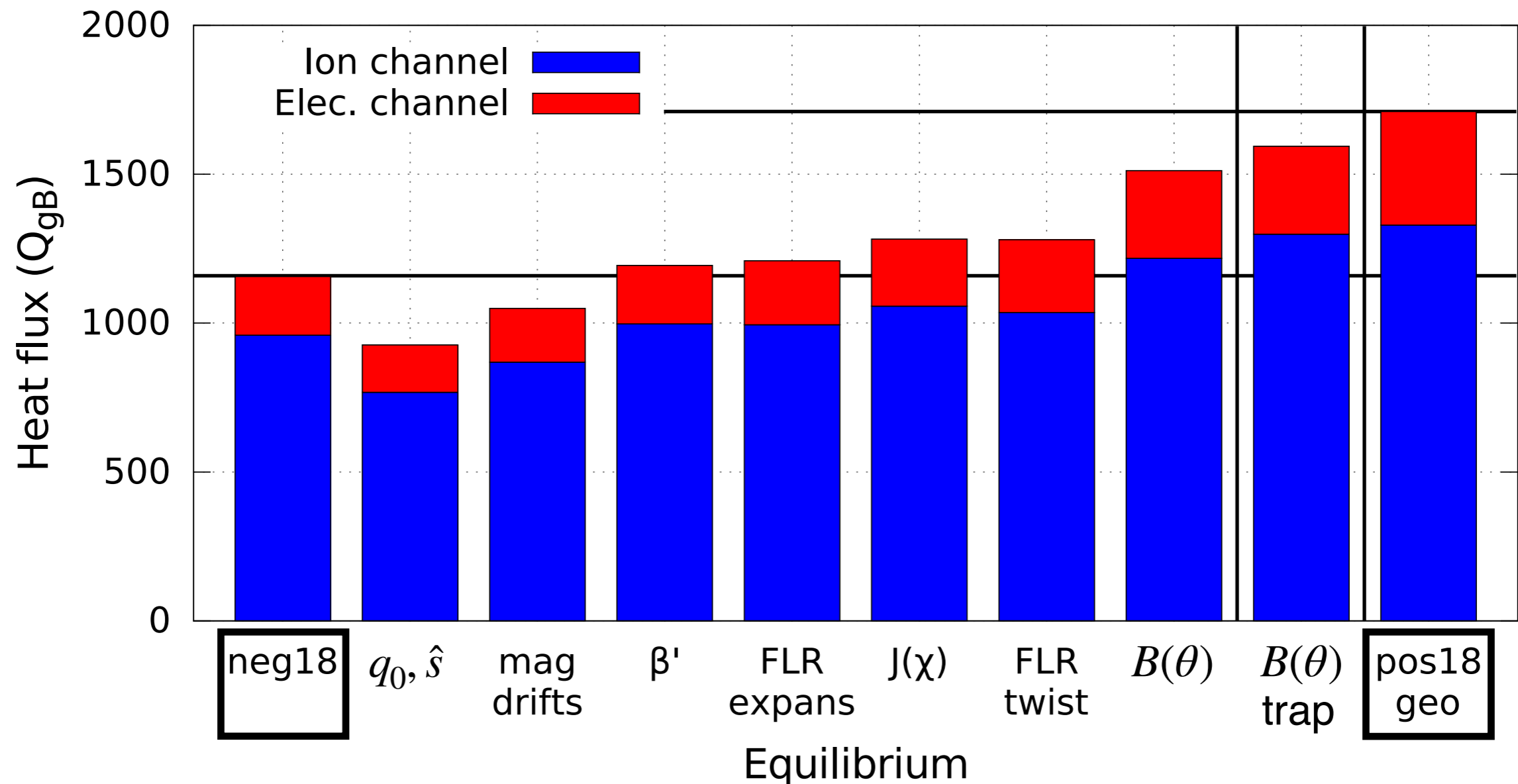
- Similar behavior when using CBC with $\nabla T_e = \nabla n = 0$ to ensure pure ITG drive

- Varied ∇T_i to maintain level of turbulence, but also holds for fixed ∇T_i



Next steps

- Use DIII-D equilibria to test the effect of swapping geometric coefficients for another ITG dominated case, ensuring it is consistent with past DEMO study



Agenda

- General updates
- Roundtable discussion with team members
- **Team meeting scheduling and resources**
- Comments, questions?

Team meetings

- Default monthly meeting schedule (subject to exceptions):
 - Whole team meeting: 4th Tuesday at 15:00
 - Core turbulence topical meeting: 2nd Thursday at 11:00
 - SOL turbulence topical meeting: 2nd Wednesday at 15:00
 - MHD+fast particles topical meeting: 2nd Thursday at 13:00
- Topical group meetings the week of October 11-15 (EFTC?)
- Next whole team meeting on Tuesday October 26th at 15h

Marconi reminder

- 58% through the allocation period (March 2021-Feb 2022)
- 13% of the following conventional A3 allocation has been used:
 - GENE: 375k node-hours = 100k (Alberto) + 125k (Justin) + 150k (MJ)
 - GBS: 175k node-hours
 - HYMAGYC: 100k node-hours
- 14% of the following GPU C1 allocation has been used:
 - ORB5: 80k node-hours

Agenda

- EUROfusion updates
- TCV experimental equilibria
- Roundtable discussion with team members
- Team meetings, schedule, and resources
- **Comments, questions?**

All done.

TCV experimental equilibria

- Run some preliminary nonlinear simulations using comparison 3

Comp. Num.	Description	Constants of comparison	Discharge	Time (sec)	elong	delta	betaN	P_nbi (kW)	q95	Ip (kA)	<ne> (x10 ¹⁹ m ⁻³)	Comments
1	Diverted, PT	q95, betaN	69515	1.02	1.43	+0.29	0.97	636	3.17	242	4.0	not great q95 match
1	Diverted, NT	q95, betaN	69340	0.58	1.42	-0.28	0.97	362	2.94	218	3.3	with Langmuir probes
2	Diverted, PT	q95, ne, Pheat	69515	1.02	1.43	+0.29	0.97	636	3.17	242	4.0	not great q95 match
2	Diverted, NT	q95, ne, Pheat	69271	1.60	1.42	-0.27	1.59	612	2.90	217	4.4	-
3	Diverted, PT	Ip, betaN, ne	69508	1.49	1.43	+0.28	1.12	735	3.31	217	4.0	-
3	Diverted, NT	Ip, betaN, ne	69340	0.58	1.42	-0.28	0.97	362	2.94	218	3.3	with Langmuir probes
4	Limited, PT	Ip, betaN, ne	69511	1.50	1.34	+0.35	1.25	1030	3.38	228	3.4	-
4	Limited, NT	Ip, betaN, ne	69273	0.85	1.29	-0.29	1.30	475	2.85	228	3.4	-
5	Limited, PT	Ip, Pheat	69511	1.50	1.34	+0.35	1.25	1030	3.38	228	3.4	-
5	Limited, NT	Ip, Pheat	69273	1.70	1.26	-0.26	2.02	1020	2.79	226	4.6	-
-	Diverted, PT	-	69515	1.58	1.43	+0.34	1.84	1020	3.29	239	7.1	in H-mode; no CXRS so Ti=Te
-	Diverted, NT	-	69340	1.60	1.40	-0.27			2.92	217	5.4	with Langmuir probes