TSVV-13 (2021-2025) → TSVV-J (2026-2027)

TSVV-13 Stellarator turbulence simulation → TSVV-J Stellarator Core Turbulence

Objective 1 (O1) – Achieve **comprehensive validation of gyrokinetic turbulence codes** in 3D magnetic configurations against stellarators, **prioritizing W7-X**, and, whenever possible, tokamaks with broken axisymmetry, going beyond the flux-tube approximation and self-consistently treating multiple particle species

Objective 2 (O2) – Advance the **fundamental understanding of turbulent transport** in the core region of stellarators under a wide range of plasma conditions through state-of-the-art gyrokinetic simulations.

Objective 3 (O3) – Develop and **deliver reduced turbulent transport models** suitable for integration into stellarator optimization frameworks.

Member	*Beneficiary*	*Period*	*Commitment (PM/year)*
José M. García-Regaña (JGR)	*CIEMAT*	*2026-2027*	*10*
Hanne Thienpondt (HT)	*CIEMAT*	*2026-2027*	*6*
Edilberto Sánchez (HS)	*CIEMAT*	*2026-2027*	*6*
José Luis Velasco (JLV)	*CIEMAT*	*2026-2027*	*2*
Claudia Salcuni (CS)	*CIEMAT*	*2026-2027*	*3*
Alejandro Bañón Navarro (ABN)	*MPG (IPP-Garching)*	*2026-2027*	*6*
Alessandro Zocco (AZ)	*MPG (IPP-Greifswald)*	*2026-2027*	*4.7*
Jörg Riemann (JR)	*MPG (IPP-Greifswald)*	*2026-2027*	*4.8*
Georgia Acton (JA)	*MPG (IPP-Greifswald)*	*2026-2027*	*3*
Linda Podavini (LP)	*MPG (IPP-Greifswald)*	*2026-2027*	*2*
Ksenia Aleynikova (KA)	*MPG (IPP-Greifswald)*	*2026-2027*	*2*
Michael Barnes (MB)	*UKAEA (Uni. Oxford)*	*2026-2027*	*6*
M. J. Pueschel (MJ)	*DIFFER*	*2026-2027*	*4*
Maikel Morren (MM)	*DIFFER (TU/e)*	*2026-2027*	*3.5*
Justin Ball (JB)	*EPFL*	*2026-2027*	*3*
Total resources			*66*

Table 1: List of members of the TSVV-J and distribution of resources, which in total amount to 6 full-time equivalents. In addition, several external experts with strong interest and competencies in stellarator turbulence will be included at zero PM.

Apart from the funded members listed in Table 1, numerous external experts with 0 PM will contribute to the progress of the project. Among them are, Iván Calvo (IC, CIEMAT), Don Fernando (DF) and Hugo Cu Castillo (HCC) from IPP-Garching, Ralf Kleiber (RK), and Josefine Proll (JP) from IPP-Greifswald, Richard Nies (RN, U. Oxford), Daniel Kennedy (DK, UKAEA), Oraz Anuaruly (OA) and Chris Smiet (CS) from EPFL. They will be invited to attend the TSVV-J regular meetings and to present their own work.

❑ For all the details of the project proposal, see the TSVV-J Scientific Proposal.

Update on the CPU/GPU usage

Each TSVV has associated a HPC Project with a yearly CPU and GPU budget to spent

- Exceptionally this year, due to the numerous issues during the commissioning of Pitagora, **we have used only a very small fraction** of the allocated CPU and GPU budget.

CPU Hours spent (Mh)

	September	October	November	December	January	February
stella	0.51	1.01	4.77	2.46	1.14	0.00
EUTERPE	0.02	0.08	0.43	0.49	0.04	0.00
GENE3D	0.00	1.00	0.00	0.00	0.00	0.00
GENE	0.00	0.00	0.55	3.10	1.68	0.00
Total	0.53	2.09	5.75	6.06	2.87	0.00

CPUHours Granted (Mh)
102.40
CPUHours Spent (Mh)
16.30
CPUHours Spent (%)
15.92%

GPU Hours spent (Mh)

	September	October	November	December	January	February
stella	0.00	0.00	0.00	0.00	0.00	0.00
EUTERPE	0.00	0.00	0.00	0.00	0.00	0.00
GENE3D	0.00	0.00	0.00	0.00	0.00	0.00
GENE	0.33	1.07	0.88	0.29	0.00	0.00
Total	0.33	1.07	0.88	0.29	0.00	0.00

GPUHours Granted (Mh)
15.36
GPUHours Spent (Mh)
2.57
GPUHours Spent (%)
16.72%

Feedback from TSVV#13: Science Meeting

Agenda

TSVV-J Regular Meeting 1

lunes 12 ene 2026, 11:00 → 12:00 Europe/Berlin

https://us02web.zoom.us/j/82575066557?pwd=QO3BUTkdmvxzacIkIV3lJVESVRbRJl.1 (Zoom)

11:00 → 11:10 **TSVV-J updates** 10m

Ponente: Jose Manuel Garcia Regana (CIEMAT)

TSVV-J_Scientific_P...

11:10 → 11:35 **Fast electrostatic microinstability evaluation in arbitrary toroidal magnetic geometry using a variational approach** 25m

(Paper - Rehearsal)

Ponente: Maikel Morren (DIFFER (Eindhoven University of Technology))

TSVV13 meeting - I...

Next meeting:

February 16 at 11:00 CET (10:00 UK)

Fast electrostatic microinstability evaluation in arbitrary toroidal magnetic geometry using a variational approach

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(Dated: 17 November 2025)