

# Key deliverables of TSVV#10 (burning plasmas)

1. Gyrokinetic electromagnetic turbulence and fast particles: ORB5/EUTERPE
2. Global AE modes and fast-particle interaction: HMGC, HYMAGYC, ORB5/EUTERPE
3. Coupling of MHD and gyrokinetic codes with a transport code: HYMAGYC
4. MHD stability in presence of a large fusion alpha population: XTOR code family
5. Burn control and energy deposition optimisation strategies: ETS/LIGKA/HAGIS
6. Reduced (QL) models for AE/EPM stability and nonlinear dynamics: LIGKA/HAGIS

# News from SB meeting

- ACH proposals accepted for 2021; details unknown
- EUROfusion Gateway is home for code developments (gitlab)
- ACH work must be reflected on the Gateway (as gitlab push)
- Mobility for 2021 ~ 10 000 Euro **for all TSVVs (in total!)**
- All TSVV publications must be submitted to the EF pinboard
- Thrust#3 Facilitator (**Carlo Sozzi WPSA**) to approve (?)
- More clarity on the budget late August
- Any adjustments on Tasks/Deliverables because of ACH delay?

# Deliverables for 2021

- (1) Progress in global gyrokinetic simulations of electromagnetic (EM) turbulence for a realistic beta including fast particles.
- (2) Progress in verification and validation of the hybrid-gyrokinetic set of the codes.
- (3) Progress in IMAS compliance of the gyrokinetic hybrid codes.
- (4) Progress in internal kink stability in the presence of fast particles and Alfvén Eigenmodes (single sawtooth period).
- (5) Progress in first time dependent ETS simulations using reduced EP models.
- (6) Progress in implementation of a critical gradient model and kick-like models compared to nonlinear single mode runs (HAGIS/LIGKA).
- (7) Progress in continuous validation of the available codes and models with experimental data.

## Code coordinators for TSVV10

- LIGKA/HAGIS : Philipp Lauber, IPP Garching
- ORB5: Thomas Hayward-Schneider, IPP Garching
- EUTERPE: Ralf Kleiber, IPP Greifswald
- XTOR: Hinrich Lutjens, CNRS-CPhT-IP Paris
- ETS: Jorge Ferreira, IPFN IST (Lisbon)
- HMGC, HYMAGYC: Gregorio Vlad, ENEA

*Code coordinators may be contacted by ACHs*

## Forthcoming activities

- September 2021: TSVV#10 3<sup>d</sup> meeting
- November 2021: TSVV#10 4<sup>th</sup> meeting
- December 2021: Annual report