**Follow-up Meeting – JT-60SA Modelling task under WP PWIE SP D**

Zoom, 06.05.2025 14:00 – 15:15

**SP D task:**

Parametric SOLPS-ITER simulations of the JT-60SA boundary layer in order to optimise the power and particle exhaust capabilities of the W divertor by magnetic field arrangement, geometry and divertor leg length (LPP-ERM/KMS)

**Deliverable D007:**

Parametric SOLPS-ITER simulations executed, optimised divertor operation point (magnetic field arrangement, geometry, and divertor leg length) identified, and exhaust capabilities compared with the reference single null divertor (JT-60SA full-C) arrangement. (LPP-ERM/KMS)

**Participants:**

Wouter Dekeyser (LPP-ERM/KMS) – D007 Deliverable Owner

Wim Van Uytven (LPP-ERM/KMS)

Carlo Sozzi (ENEA) – Project Leader WPSA

Giulio Rubino (ENEA)

David Douai (CEA) – CO WPPWIE

Andreas Kirschner (FZJ) – Subproject Leader SP D (WPPWIE)

**Minutes:**

**Talk presented by Wim Van Uytven (for more details see according slides):**

Benchmark between SOLPS-ITER 3.0.8 and WG versions

* Four differences detected (sheath boundary conditions, flux limiters, parallel electron velocity around X-point, EIRENE fluxes)
* Benchmark runs with only (small) differences in EIRENE fluxes remaining: main differences clarified, still (more or less) minor differences in target temperature profiles, but overall satisfying agreement

Narrow grid cases

* Ready to be used

Extended grids

* Technically running
* Remaining numerical issues with parallel velocities and temperatures

Extended grids with alternative geometries

* Ready to be used

**Discussion:**

Remaining numerical issues of WG version to be solved

Flux limiters: assumptions a bit unclear, runs to be done with “standard assumption” and w/o flux limiters for comparison …

**Plan of the foreseen modelling cases under SP D with respect to possible changes of the divertor design**

* Outer divertor inclination 5°, 10°
* Close the resulting gap with reflector plate? To be clarified with F4E …
* X-point upwards shift

**Possible activities outside SP D, but connected to SP D activity:**

* Explore means to reduce outer target temperatures
* Core transport to estimate acceptable W flux from divertor (i.e. also acceptable electron and ion temperature on (in particular outer) target … JINTRAC … co-operation with Stefano Gabriellini, Luca Garzotti …