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| **WPPWIE Deliverables Status Report** | | | | | **Date:** | | | 01-Sep-2022 | | |
| **Subproject:** | SP D / PSI and SOL Modelling | | | | **Deliverable ID** | | | PWIE-SP D.4.T-T002-D001 | | |
| **Deliverable owner:** | Ch. Day (KIT) | | | | **Deliverable due date** | | | 31-12-2022 | | |
| **WP Leader:**  **SP Coordinator:** | S. Brezinsek (FZJ)  A. Kirschner (FZJ) | | | |  | | |  | | |
| **Task title:** | SP D.4 Neutral Particles Modelling | | | | | | | | | |
| **Deliverable title:** | Updated version of DIVGAS and benchmarking simulations studying the newly developed features of the code on the example of DEMO divertor. (KIT) | | | | | | | | | |
| **Status:** |  | **Completed** |  | **Partially completed** | |  | **Delayed** | |  | **Cancelled** |
| Please write a short status report (max. ½ pages) here.  Please check the status of the deliverable(s) with a “x” in the row above.  If the deliverable(s) are delayed, please also indicate an estimated completion date in the report text.  If the deliverable(s) include machine time, please indicate the number of days that have been used for the deliverable(s) in the report text.  For reference, the specification of this task from the PMP is given below. | | | | | | | | | | |
| **Reference from PMP:** | | | | | | | | | | |
| Modelling of neutrals implies the analysis of the performance of particle exhaust systems with the aim of optimization. This is foreseen for current devices and can influence the design of pumping gaps for present machines (e.g. for W7-X) and provides important information for future devices like DEMO. For the modelling codes like DIVGAS can be applied.  The calculation of neutral fluxes, including energy and angular distribution, is important to estimate their impact on the erosion in particular at the first wall. The output will be used within migration modelling studies. The neutral fluxes can be modelled for instance by EIRENE post-processing of SOLPS-ITER simulations. | | | | | | | | | | |
| **Inputs required:**  Plasma parameters (e.g. from WPDES, WPTE) | | | | | | | | | | |
| **Tasks to be performed:**   * DIVGAS code development and modelling of neutral particle gas dynamics and exhaust for DEMO (KIT)   Post-processing of plasma modelling with SOLPS or OSM/EIRENE to get neutral fluxes to the walls (VTT) | | | | | | | | | | |
| **Deliverables:**   |  |  | | --- | --- | | **Deliverable ID** | **Deliverable Title** | | D001 | Updated version of DIVGAS and benchmarking simulations studying the newly developed features of the code on the example of DEMO divertor. (KIT) | | D002 | Atomic and molecular fluxes to the wall surfaces (VTT) | | | | | | | | | | | |
| **Management Information**  **Human Resources (2022)**:   |  |  |  |  | | --- | --- | --- | --- | | **Deliverable Owner** | **Beneficiary** | **PM** | **Deliverable (Team)** | | Ch. Day | KIT | 9 | D001 (S. Varoutis, C. Tantos) | | M. Groth | VTT | 2 | D002 (M. Groth, A. Järvinen, H. Kumpulainen) | | **Total** |  | 11 |  |   **Machine Resources (2022):**   |  |  |  |  | | --- | --- | --- | --- | | **Device** | **Beneficiary** | **Days** | **Related Deliverable** | | n.a. |  |  |  | |  |  |  |  |   **Other resources:**   * HPC requests   **Collaborations:**   * WPTE * IO and ITPA DivSOL * FTD DES   **Other information:**  Connected to TSVVs associated with WPPWIE | | | | | | | | | | |