**TG Edge&Divertor**

**Subgroup Fueling & Exhaust**

**H exhaust proposal discussion**

**16.02.2022 from 1002 to 1103**

**Attendees:**

Thierry, Christos, CP, Victoria, Georg, Stylianos, Maciej, Volker, Dieter

**Meeting objective:**

Give an overview of the available gas fueling and exhaust systems as well as neutral gas diagnostics. Discuss key metrics and boundary conditions for modeling.

**Available neutral gas systems:**

CP would like to see a cross section of the high iota sub-divertor space including pump gap and AEP gas manometers.

The neutral gas manometers were missing a new location in the AEL port which is on the HFS midplane.

There is no cryo pump in the high iota sub-divertor. However the low iota and high iota sub-divertor space is no longer separated as in OP1.2.

Excluded in the presentation were the pressure gauges from the vacuum group. They were operated at 1 Hz in the last campaign, limiting their benefit to analysis. The desire for a higher sampling rate and an overview of positions was voiced by multiple attendees.

Maciej and CP presented some slides on the changes to the sub-divertor space. Low iota and high iota sub-divertor space is no longer separated and additionaly the upper and lower sub-divertor is now connected. The available graphs of the “Divertorabschottung” are very abstract and difficult to follow. A better overview is desirable.

For DivGas the existing CATIA model of the sub-divertor can be simplified and included.

The key boundary condition for DivGas as well as ANSYS is the neutral source entering predominantly through the pump-gap. While we do have information about the neutral pressure at this location, we don’t have a reliable estimate for an S\_eff. This will be discussed in the next meeting in 2 weeks.

Additional boundary conditions are the sub-divertor wall temperatures as well as the temperature of the entering neutral gas. A list of available thermocouples in the sub-divertor will be compieled. It was discussed if the strike line temperature or the sub-divertor wall temperature is more applicable for the neutral gas influx at the pump gap.

The desire for a unified modeling scenario that includes EMC3-EIRENE, DivGas, and Ansys was voiced.

Volker commented that for an overall strategy it is important to get a good understanding of the fundamentals before we diversify the analysis. However proposals should address all questions that were raised. A prioritization will happen at a later time.

**Action items:**

Maciej:

Better overview of the new Divertorabschottung and the connection behind the HFS heat shield.

Sum of the surface area of all combined gaps.

Georg:

Coordinate with Olaf Volzke and Torsten Bräuer and overview of the vacuum group gauges and request a higher sampling rate than the current 1 Hz.

Thierry & Georg:

Work on and extend a concise overview of neutral gas systems relevant to the group.

Stylianos, Christos, & Victoria:

Communicate needs regarding an overarching modeling scenario that includes EMC3-EIRENE, DivGas, and Ansys. Introduction email will be sent out by Thierry.

Next meeting is as scheduled on March 2nd. We will discuss the different approaches to address the pump-gap as well as the leakage flux.