

Working Group O2 (31/3 afternoon) – Minutes

Summary of the presentations

- Gianmaria De Tommasi (GDT) gave a brief overview about the envisaged schedule for IC, going into the details specially related to magnetic control and MHD studies
- GDT gave a presentation about the activity related to plasma magnetic control carried out in EU in 2019-early 2020. A complete list of the available tools for plasma magnetic control design and assessment has been presented. QST tools available (at the moment) in EU have also been presented (CCS and FBC, in their compiled version).
- Fabio Villone (FV) gave a presentation about the disruption simulations task including 3D effects carried out in 2019-early 2020.
- Vadim Yanovskiy (VY) presented some preliminary studies about assessment of the forces on the mechanical structures after asymmetric disruption.

Summary of the open discussion

- Domenico Abate asked if the possibility of having a non "purely" vertical unstable mode has been investigated, given the "drop-shaped" plasma cross-section of the IC reference. GDT answer: no.

GDT note: this is linked to the work Domenico did for his PhD thesis. It may be interesting to make some studies, although I'm quite sure QST colleagues will be not interested at the moment (see also next note). GDT proposal: if there are time and resources (especially on Massimiliano Mattei's side) it can be considered as a background activity (Domenico already sent an email for further details).

- FV -> "preliminary studies show that the (unstable) growth rate that appeared in some of the CREATE-NL equilibria of the IC scenario may be worst in the 3D case (the 0.36 case become about 1)"

GDT note: not only for this reason, but we need to come back to Suzuki, Yoshida (and maybe Ide) to have feedback on the two reports that have been sent (the one with CCS and FBC integrated simulations, sent on 24 Oct 2019, while the one IC equilibria was sent on 10 Feb 2020)

GDT proposal: we should consider to propose a session dedicated to disruption modelling and studies with QST colleagues during the next TCM. This could be the opportunity to agree with QST what they are more interested in, in order to prioritize the Fabio's work. Since the expertise involved are the same and Fabio is playing a role also on the 3D modelling of the breakdown, I would propose to have a join discussion on the breakdown and disruptions in the same satellite meeting.

List of Actions

- cross-check info on magnetic probes available for IC (their 3D location)
 - who: GDT & Leonardo Pigatto (ongoing, data sent to Leonardo on 31/3/2020)
- Vadim Yanovskiy asked about the sampling frequency of "Tomarchio's diagnostic" for forces measurement on TFC and vessel
 - who: GDT will retrieve the information and send it to Vadim