NURESAFE WP1.4
HIGHER-RESOLUTION VVER MSLB

DYN3D-FLICA4 Coupling

J. Jimenez, R. Molitor, V. Sanchez

Presented by J. Jimenez

victor.sanchez@kit.edu
or
javier.jimenez@kit.edu

Outline

- **Standalone DYN3D input**

- **Standalone FLICA4 input**

- **Status of the coupling between DYN3D and FLICA4**

- **Conclusion and Outlook**

Standalone DYN3D

- **All the next input decks and python scripts can be found within the NURESAFE SVN repository in:**

https://www-svn-corpus.cea.fr/nuresafe/SAT/TEST/FLICA_DYN3D/

- **The DYN3D input deck is based on the one developed by NRI in NURISP (D3.1.3.3b). It uses the HEXNEM2 method.**
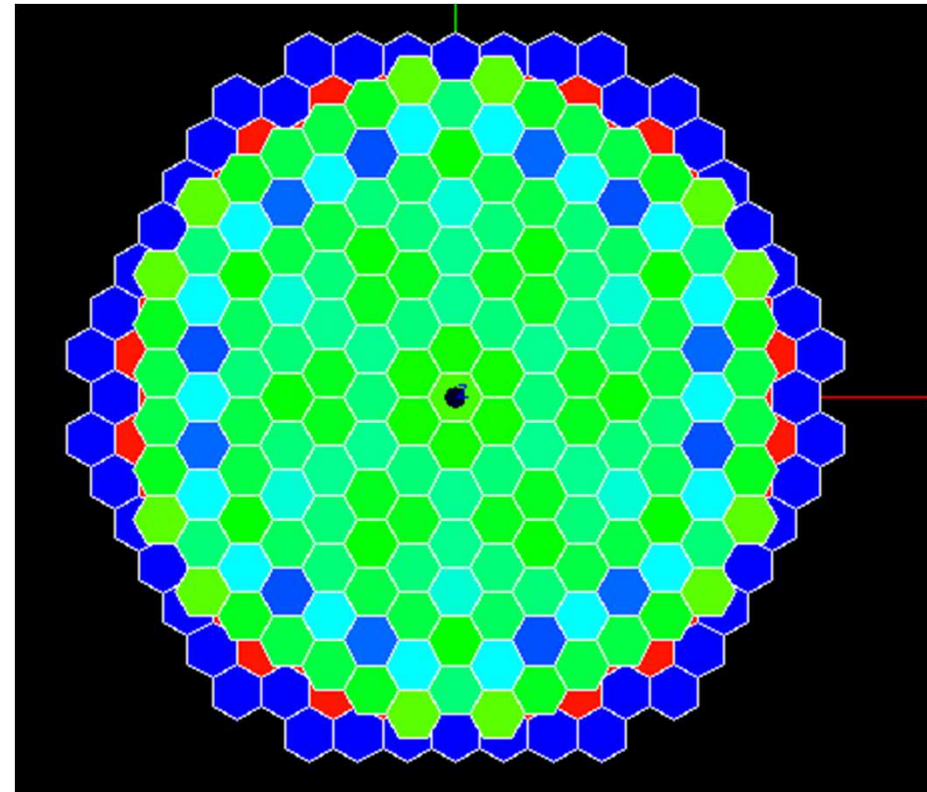
Standalone FLICA4
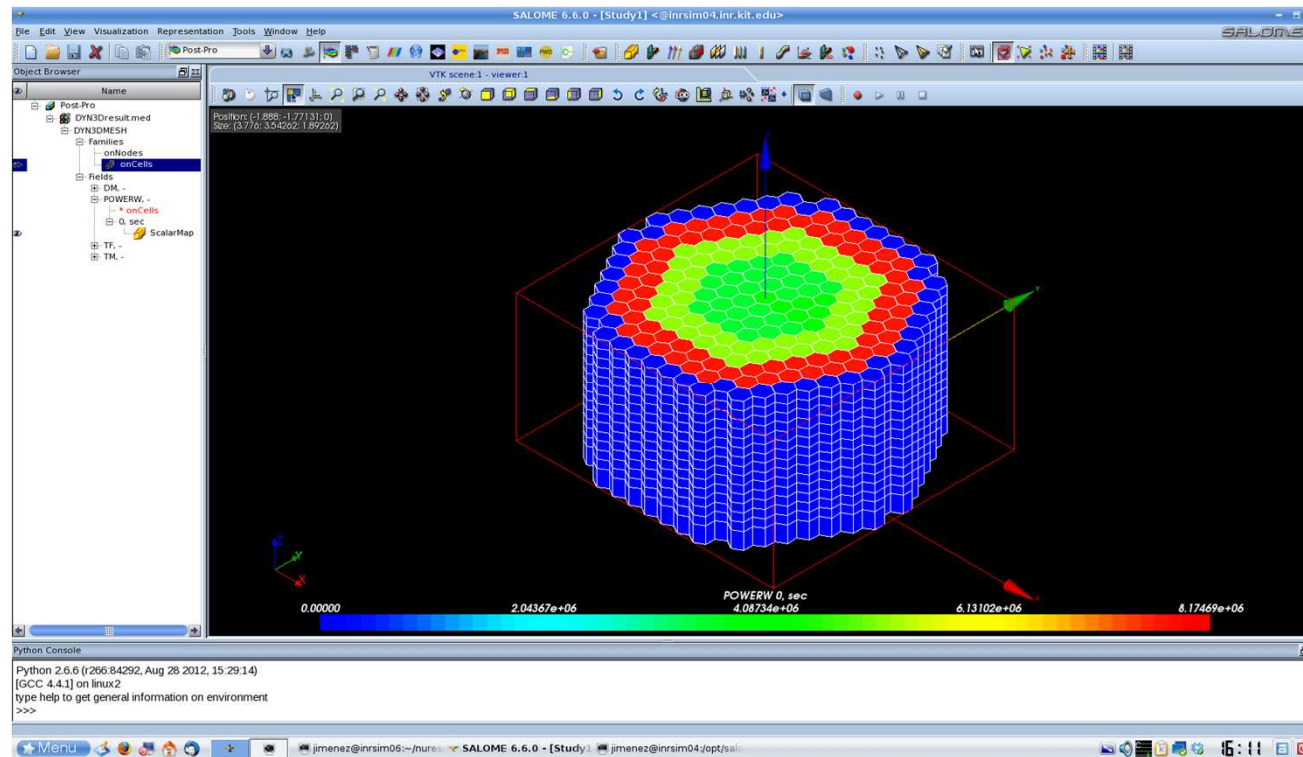
- **The input deck has been developed within WP1.4 in D14.22a**

- **Its structure is well described in the report.**
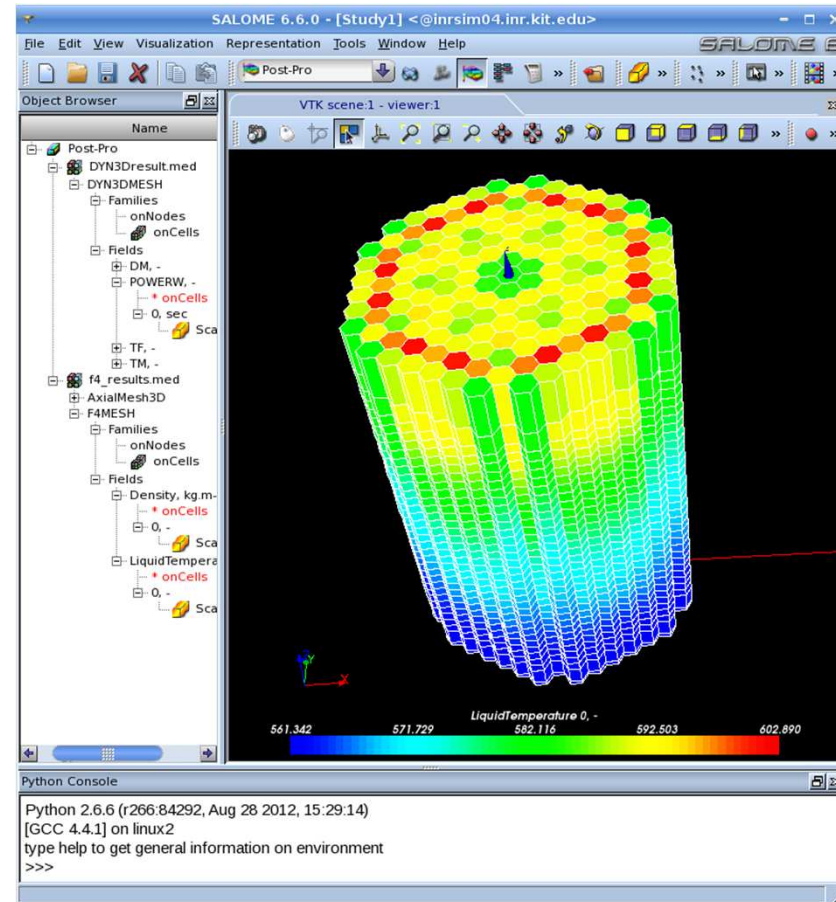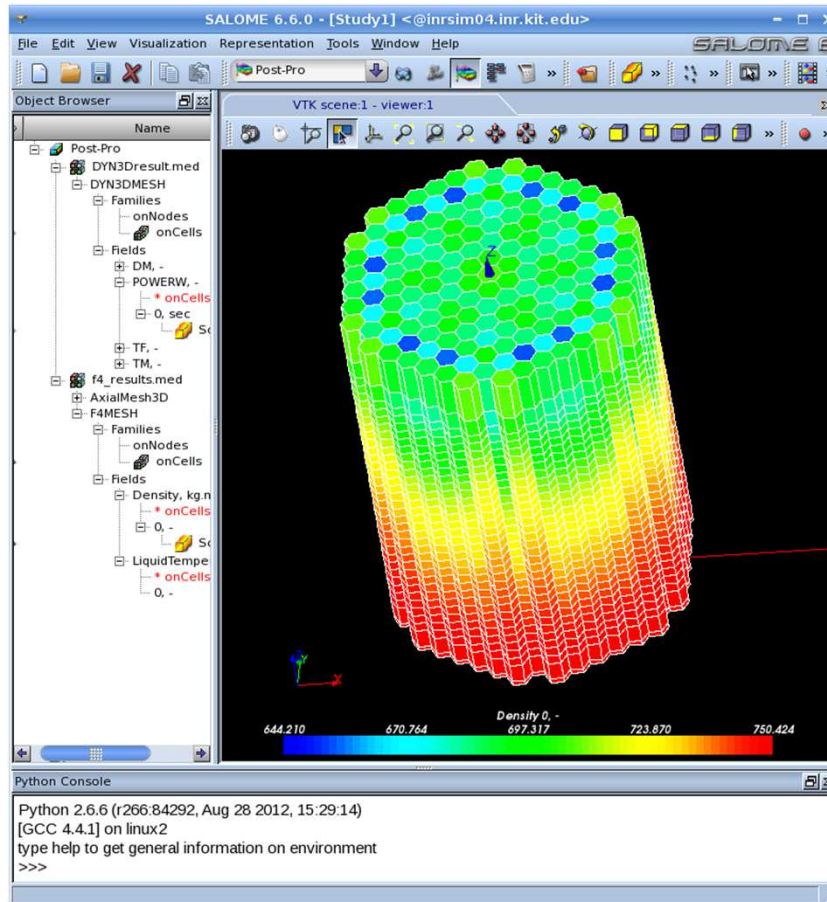
Coupling via python script using INTERP tool

- **There are still issues with the coupling using INTERP_2_5D.**
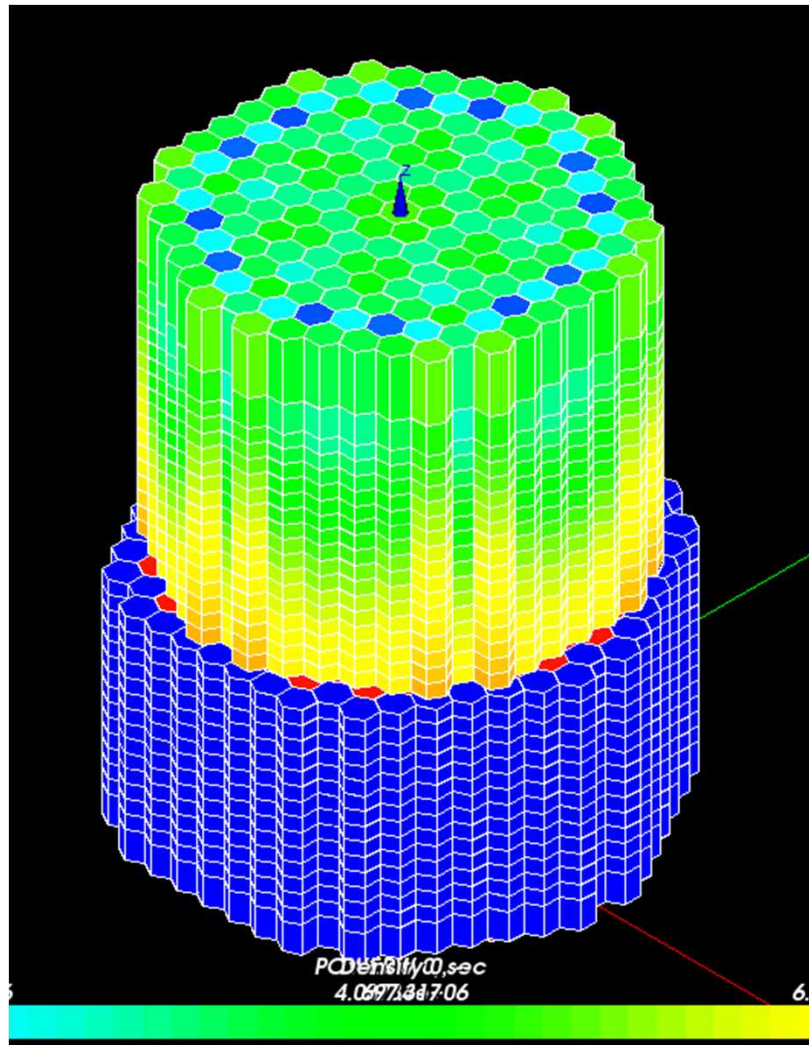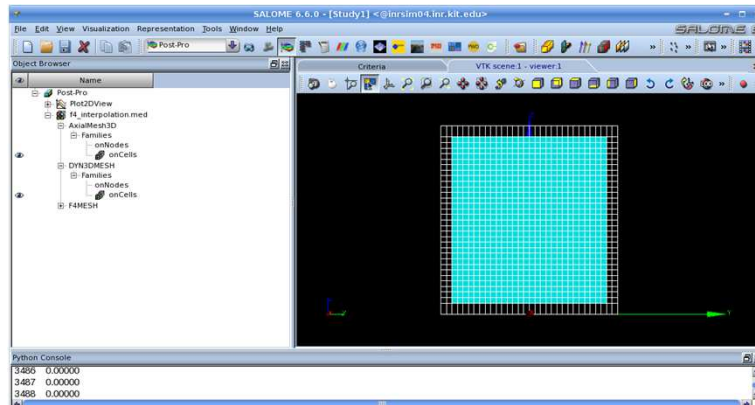

  - **DYN3D Mesh need to be properly place**
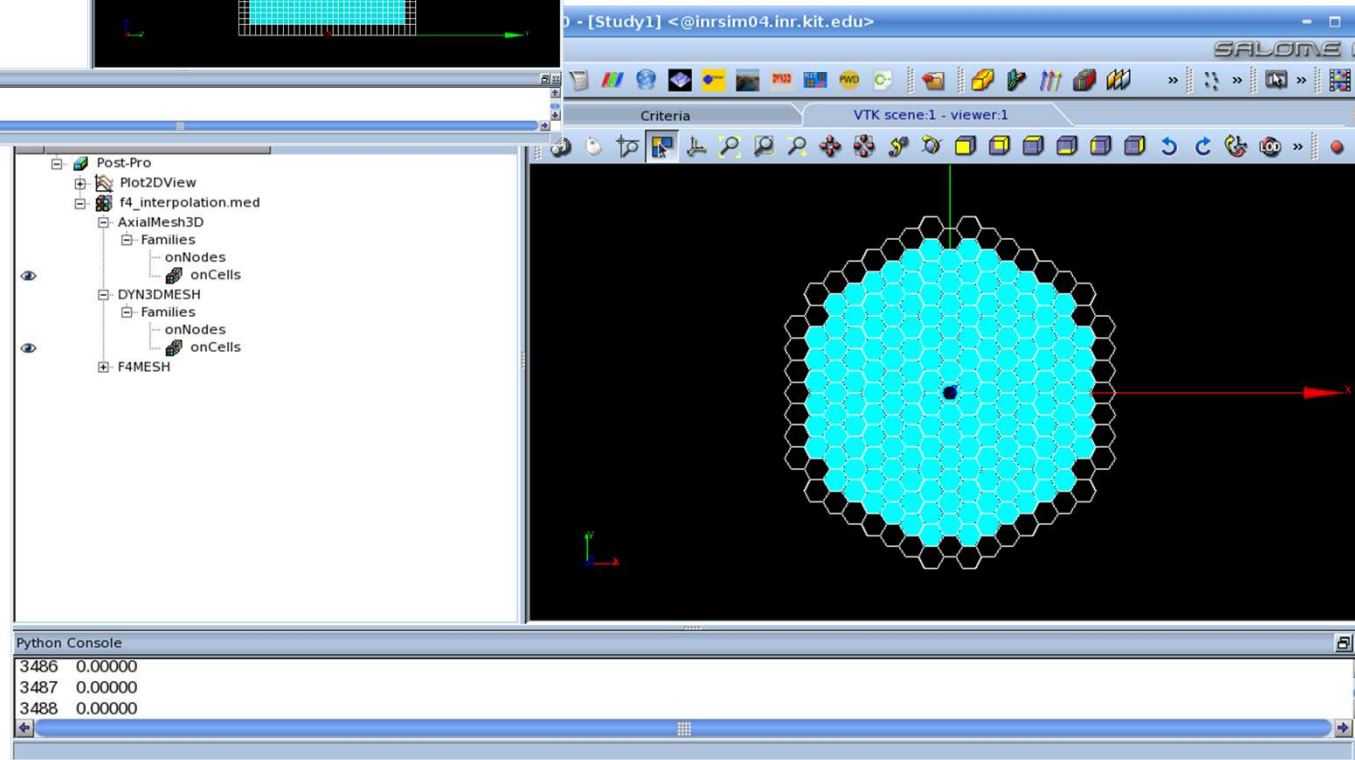
    - Rotation and X, Y, Z position

Coupling via python script using INTERP tool

- **There are still issues with the coupling using INTERP_2_5D.**

- **DYN3D Mesh need to be properly place (SOLVED)**
  - Rotation and X, Y, Z position

Coupling status

- **Issues found while using the INTERP_2_5D tool**
  - The presence of an axial bottom reflector in the neutronic mesh makes some problems.
  - For CRONOS-FLICA coupling, the axial reflectors are taking out from the mesh, so then, the bottom faces of the active core are made to overlap in at Z=0.0.
  - New methods were added to DYN3D in order to position the mesh in the proper place for the coupling.

- **Several emails exchange in the last months (CEA, KIT, HZDR) but still it is not operational.**

Conclusion and Outlook

- **There are still issues with the coupling using INTERP.**

- **As a backup solution a coupling script between DYN3D and SUBCHANFLOW has been developed.**

  - Not working fine due to the same problem with INTERP

  - Trying with the REMAPPER tool was not successfully conducted. Error message coming from CORBA, bad data type

- **Fluent communication via email and use of the Trac tool at CEA (tickets based).**

- **During this process several bugs were found and solved in the DYN3D and INTERP_2_5D components.**

FUTURE WORK

- **Continue iterating via email with CEA, and HZDR.**

- **Once solved the issues, proceed with the analysis of the coupled solutions.**

THANKS FOR YOUR ATTENTION