NURESAFE WP1.4
HIGHER-RESOLUTION VVER MSLB

DYN3D-FLICA4 Coupling

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Outline

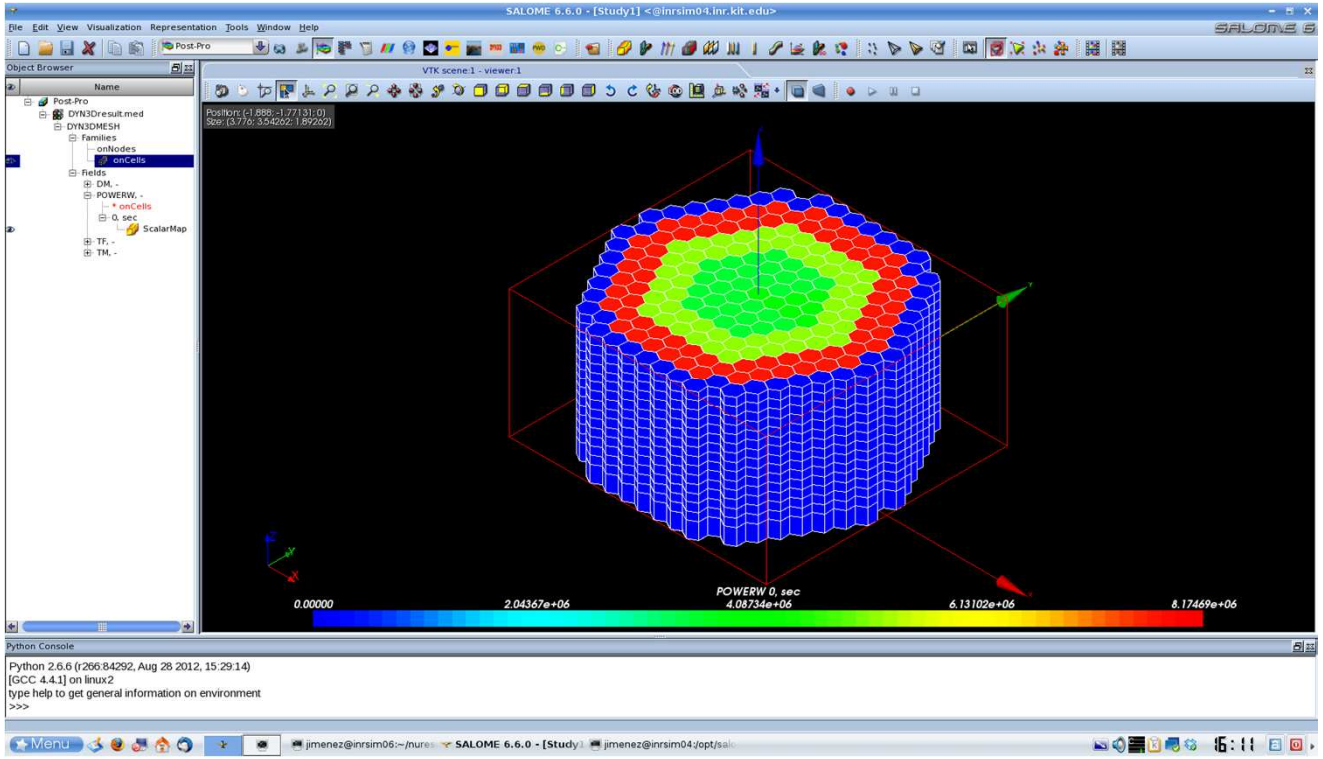
- Standalone DYN3D input
- Standalone FLICA4 input
- Status of the coupling between DYN3D and FLICA4
- Conclusion and Outlook

Standalone DYN3D

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

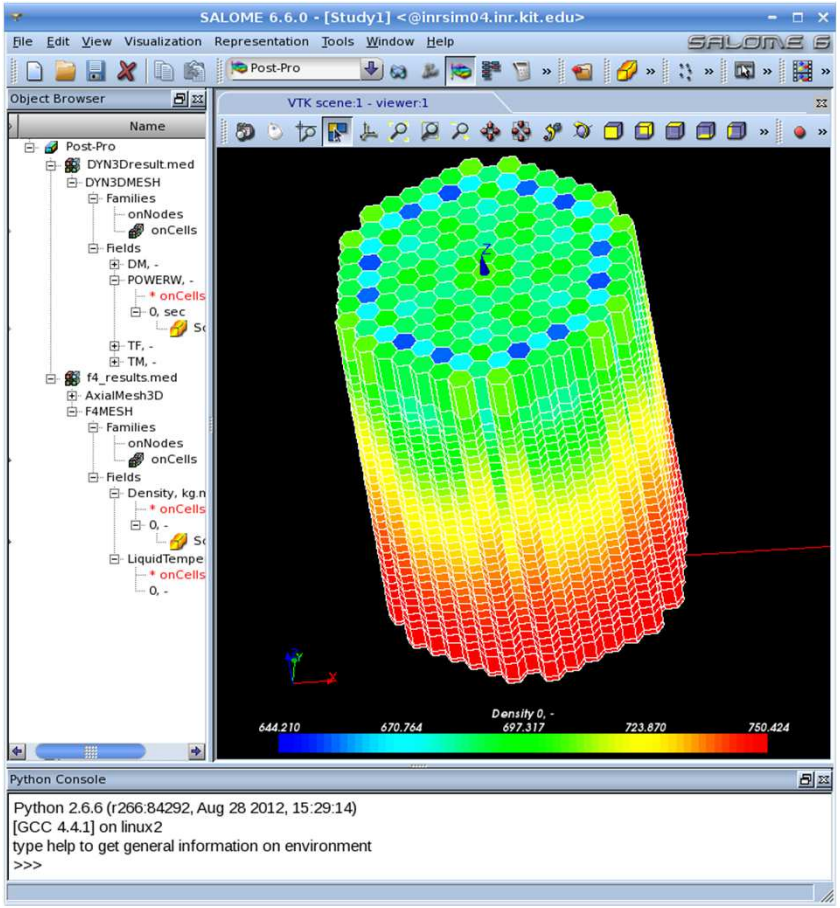
https://www-svn-corpus.cea.fr/nuresafe/SAT/TEST/FLICA_DYN3D/

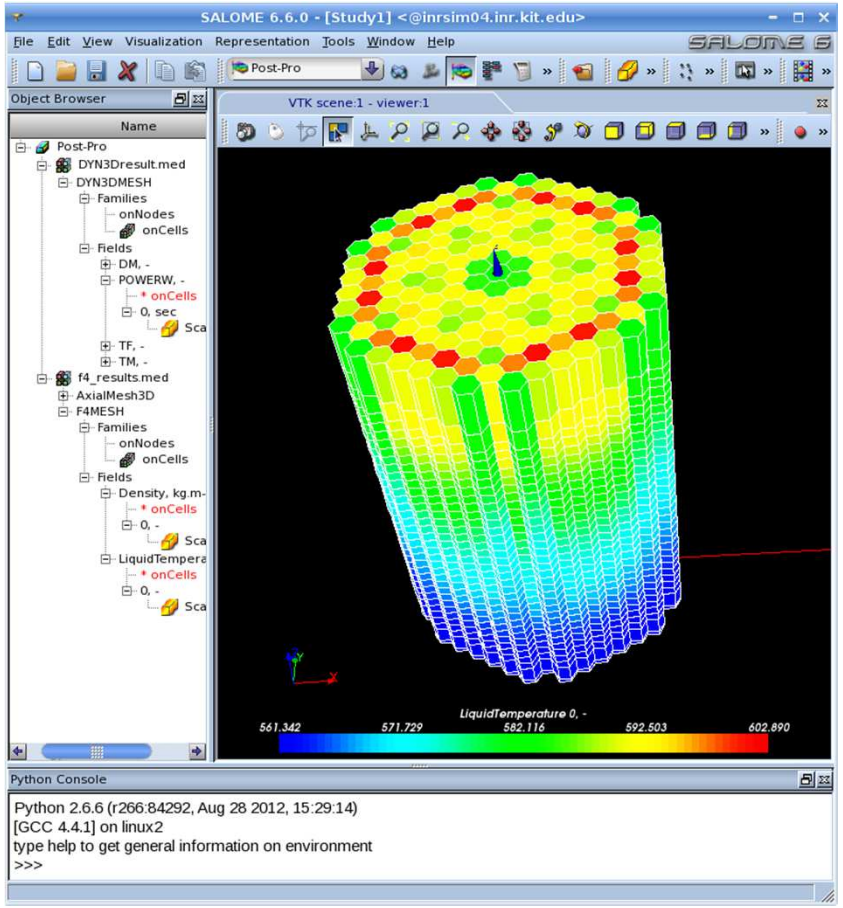
- **The DYN3D input deck is based on the one developed by NRI in NURISP (D3.1.3.3b). It uses the HEXNEM2 method.**



Standalone FLICA4

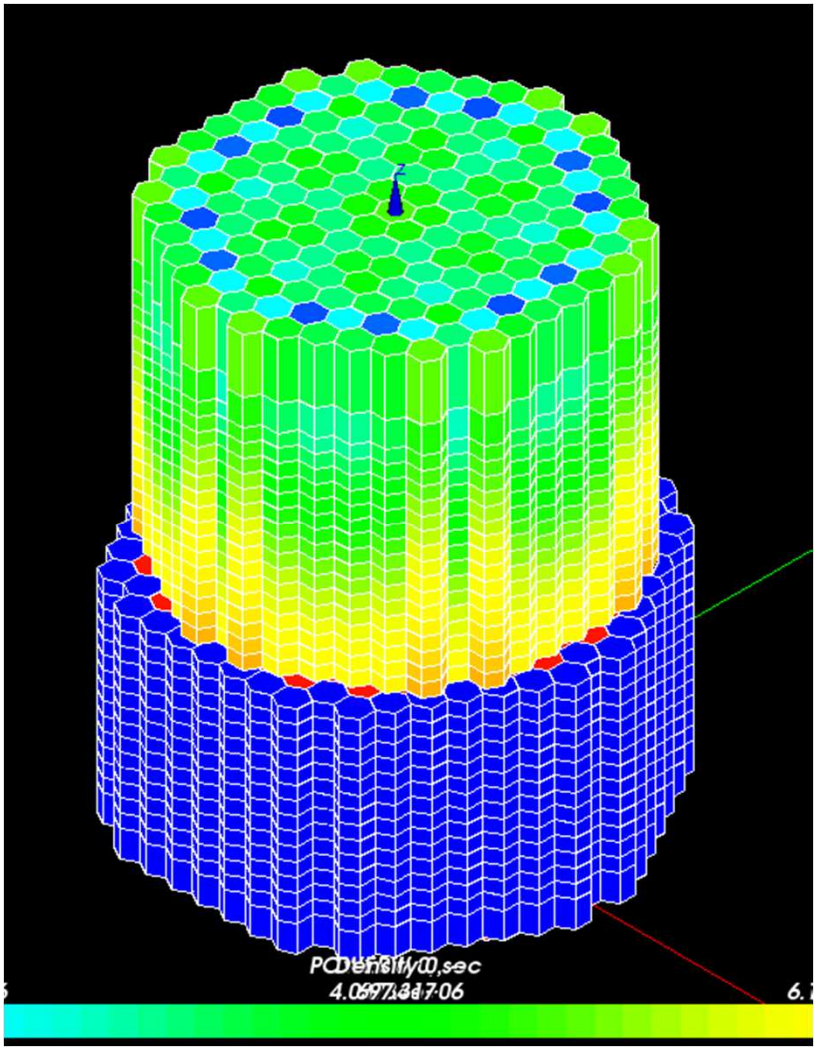
- The input deck has been developed within WP1.4 in D14.22a
- Its structure is well described in the report.



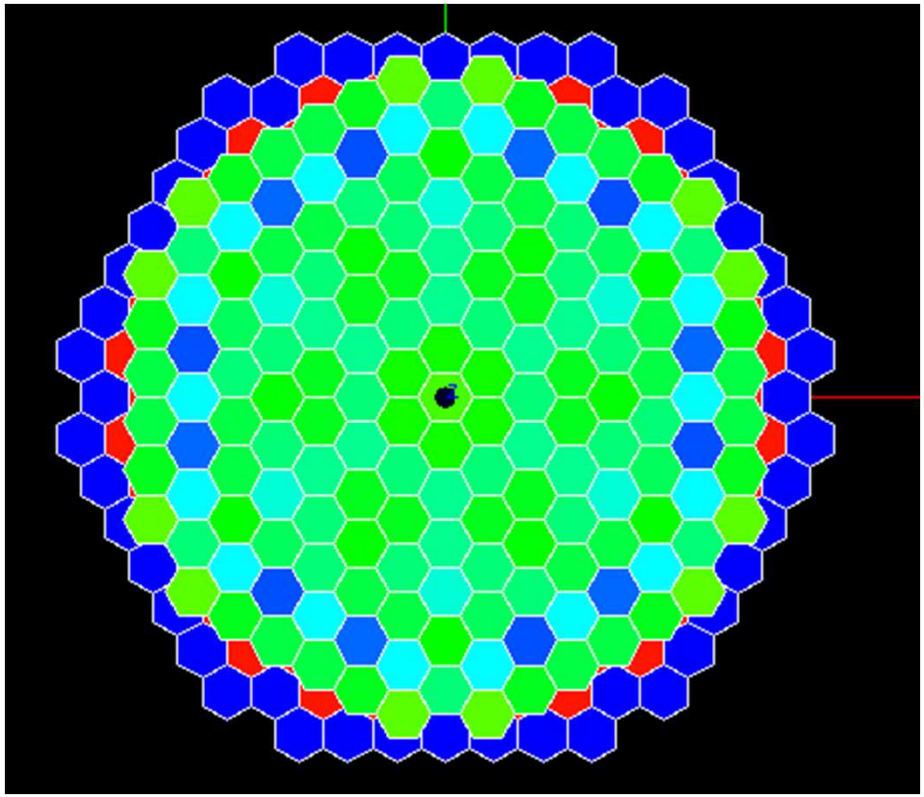


Coupling via python script using INTERP tool

- There are still issues with the coupling using INTERP_2_5D.



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



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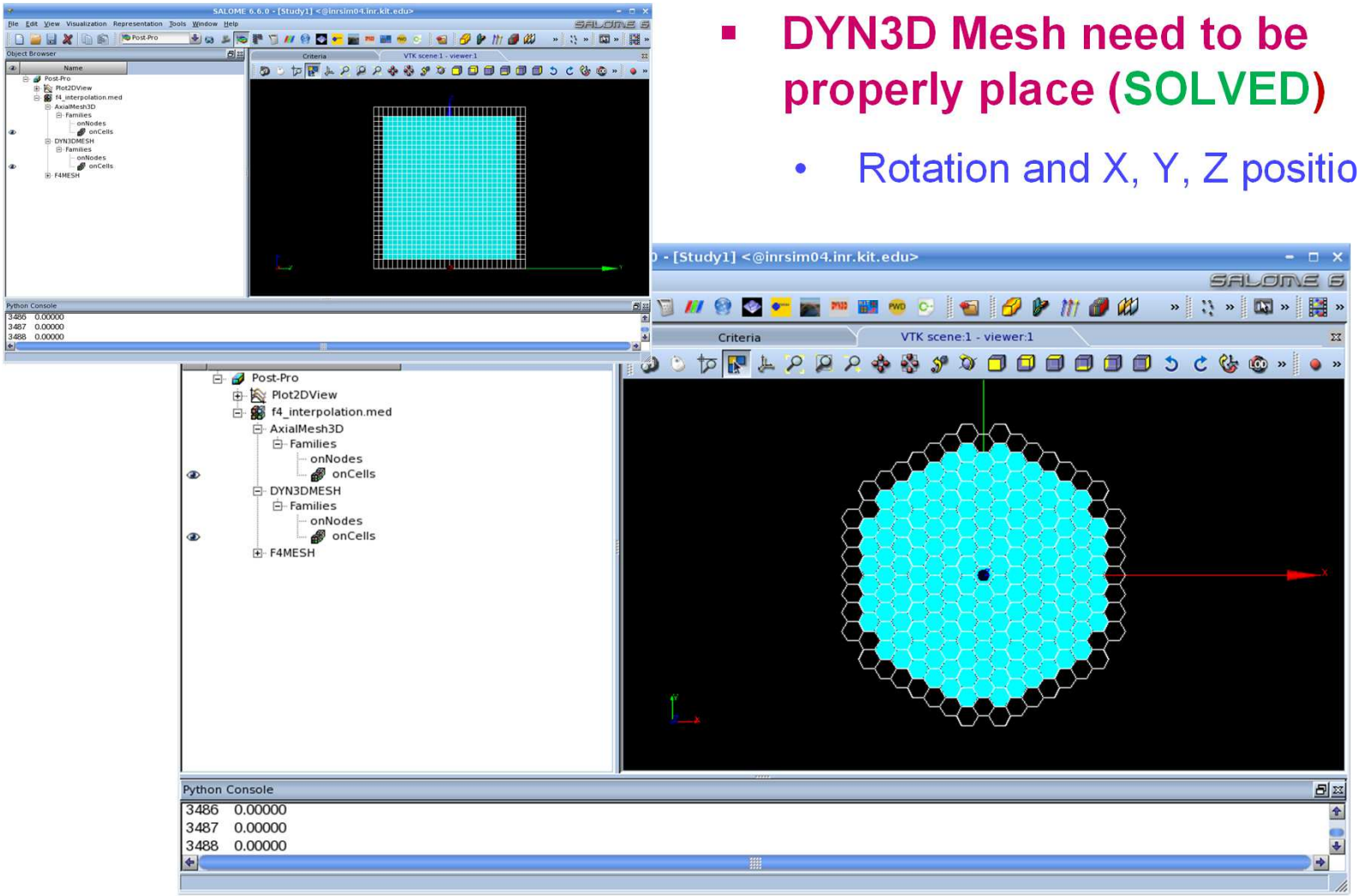

- DYN3D Mesh need to be properly place (SOLVED)
  - Rotation and X, Y, Z position

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