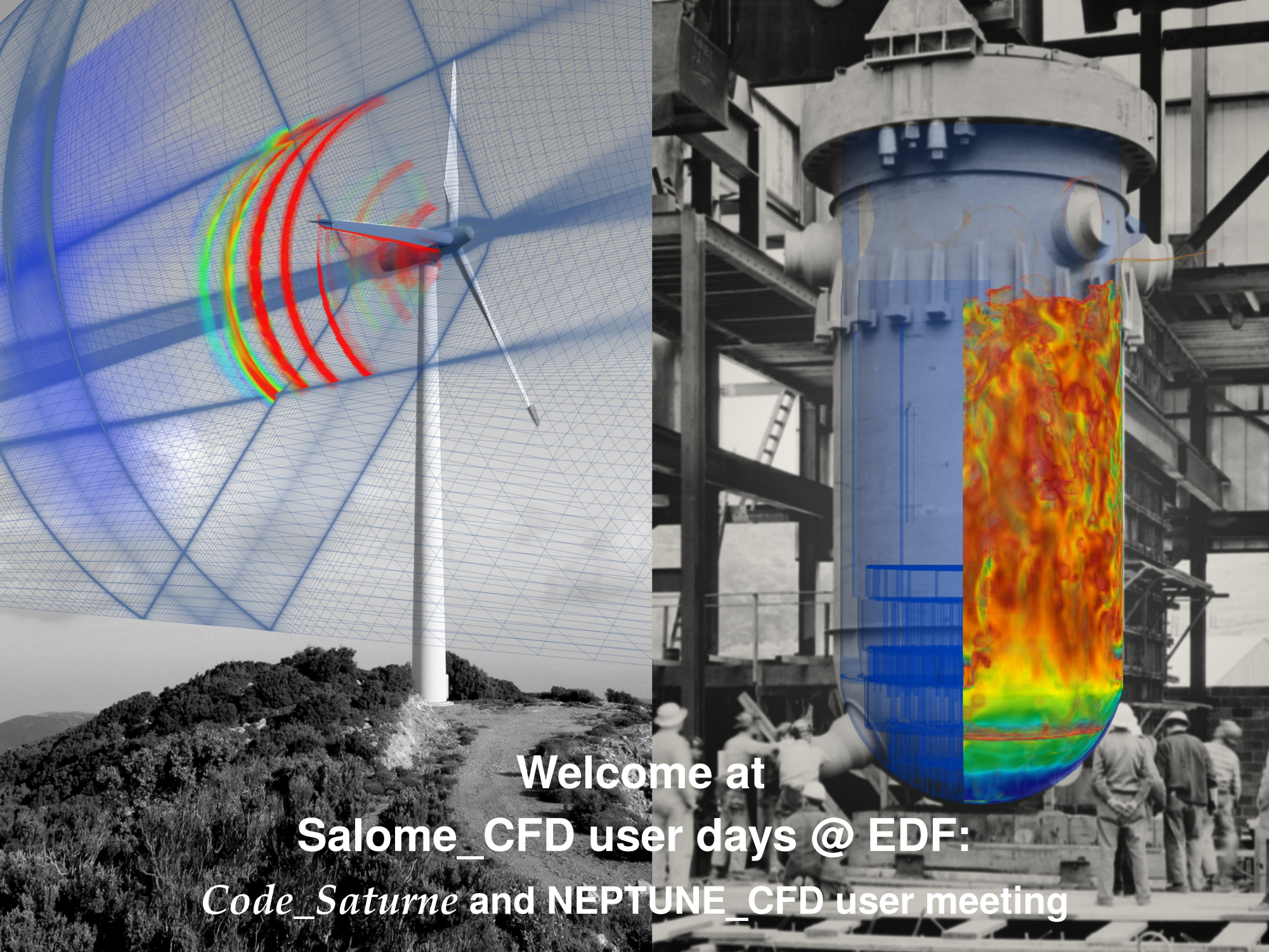
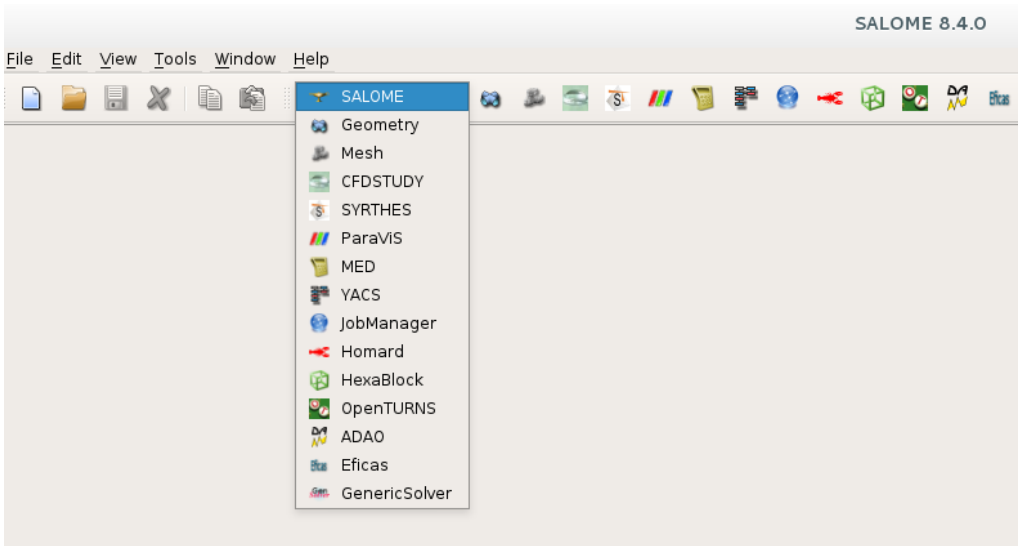
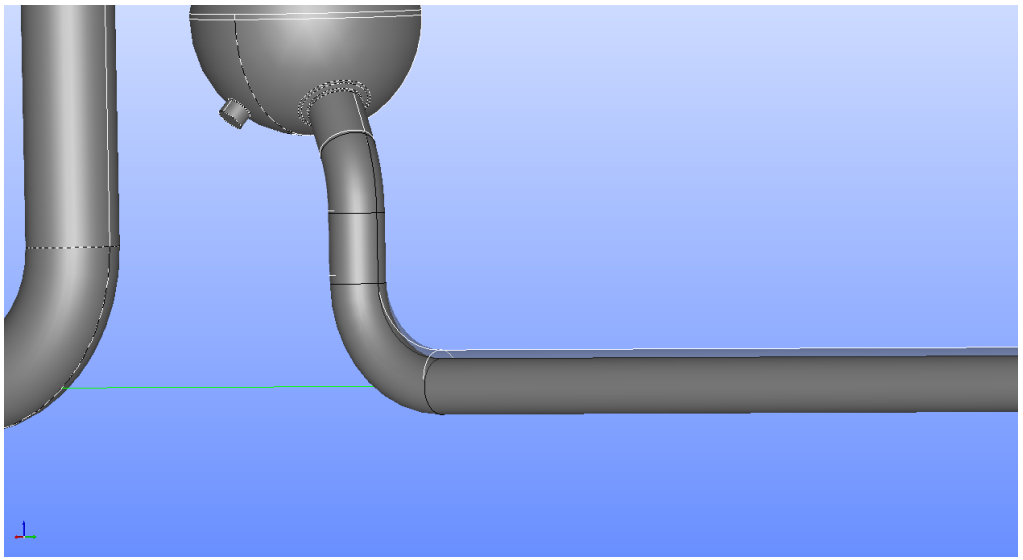


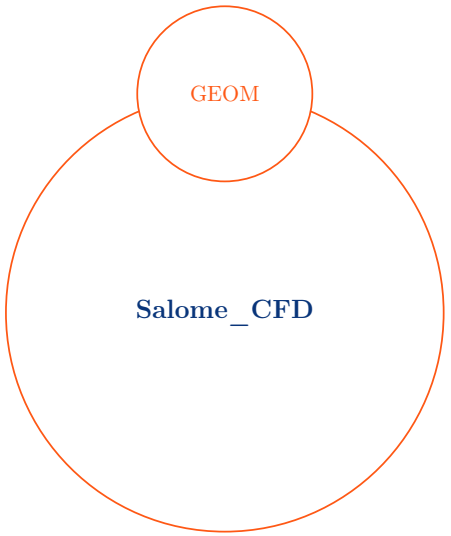
Welcome at
Salome_CFD user days @ EDF:
Code_Saturne and NEPTUNE_CFD user meeting

Salome_CFD in short

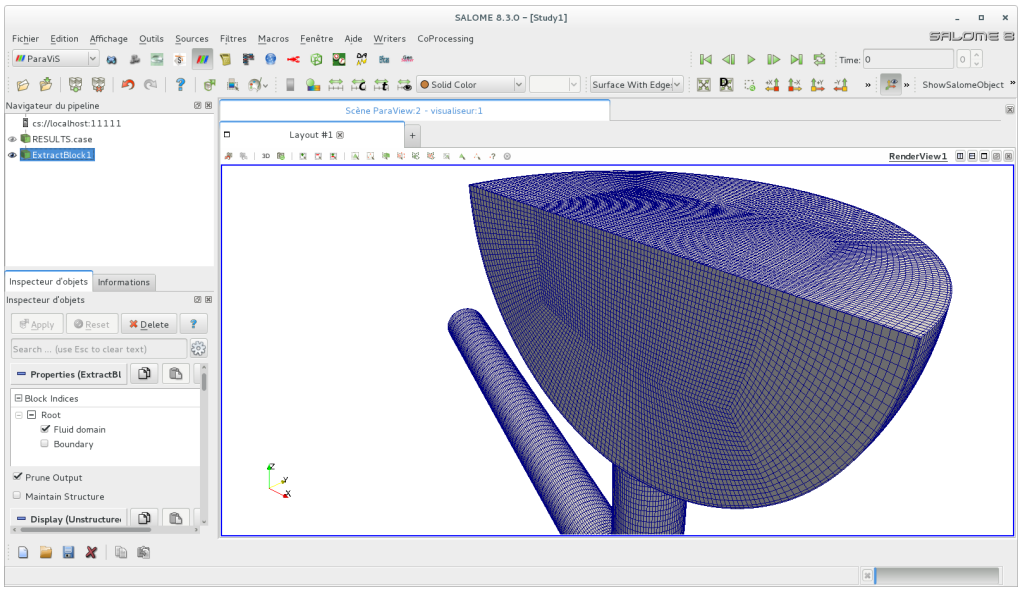


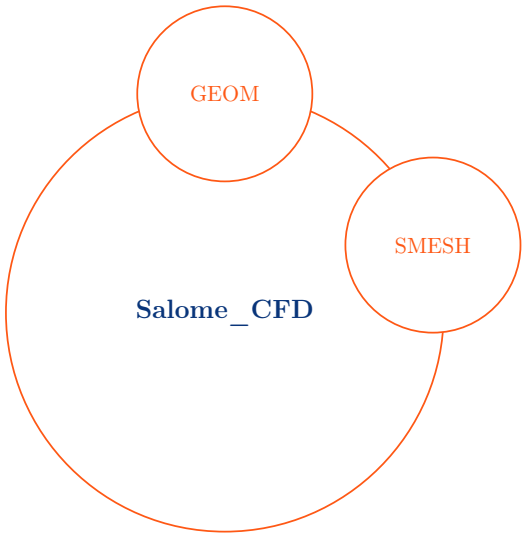
Salome_CFD in short





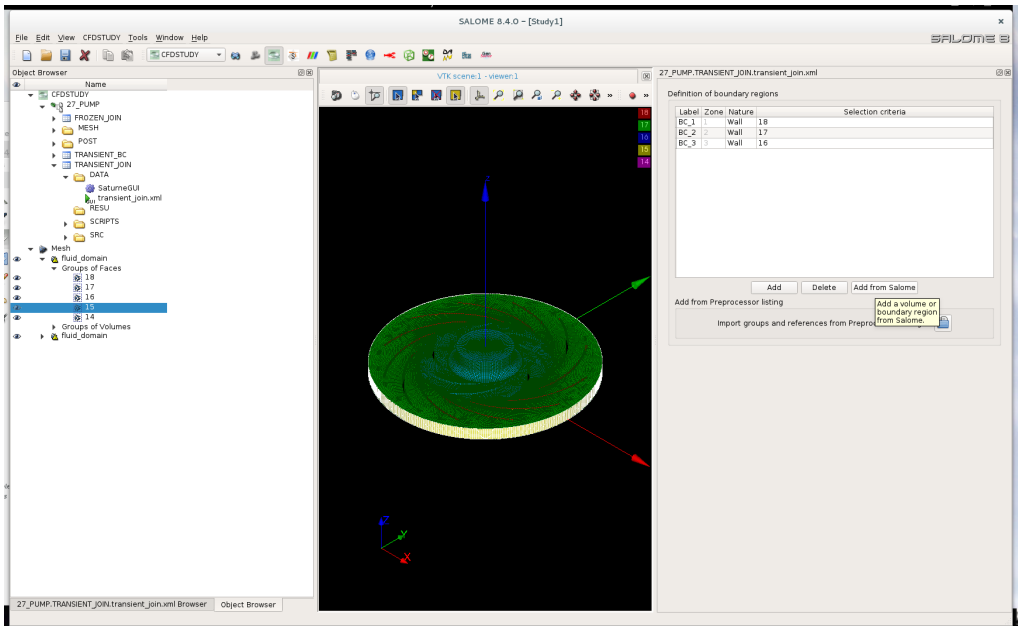
Salome_CFD in short

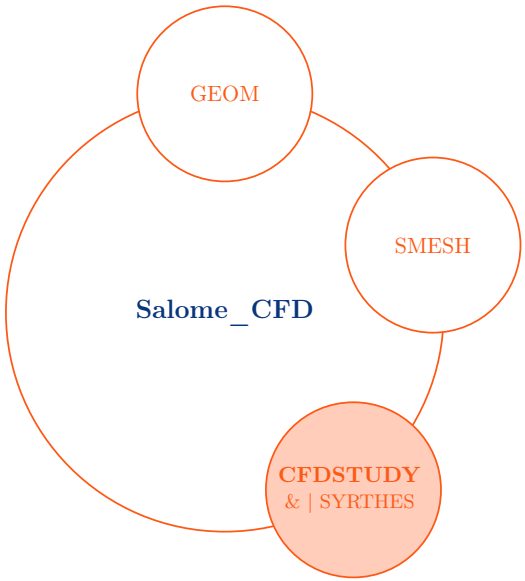




Advanced scripting capabilities

Salome_CFD in short

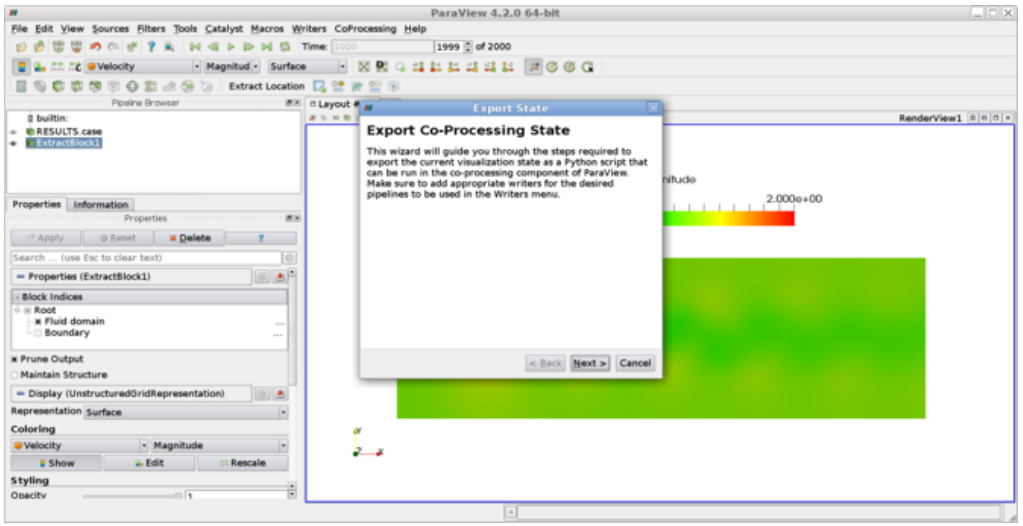


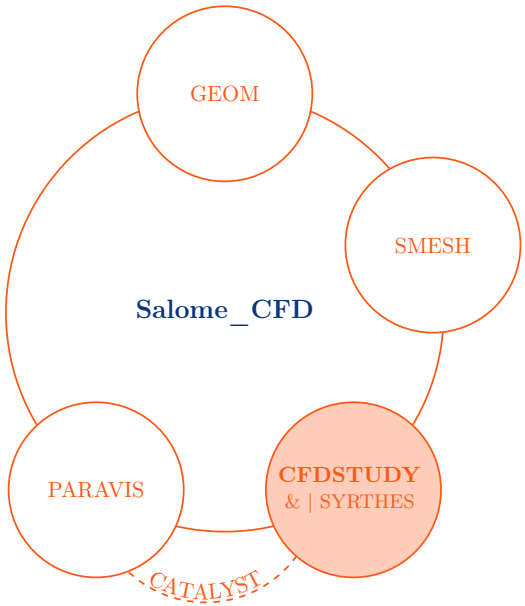


Single-phase solver *Code_Saturne*

Multi-phase solver NEPTUNE_CFD

Salome_CFD in short

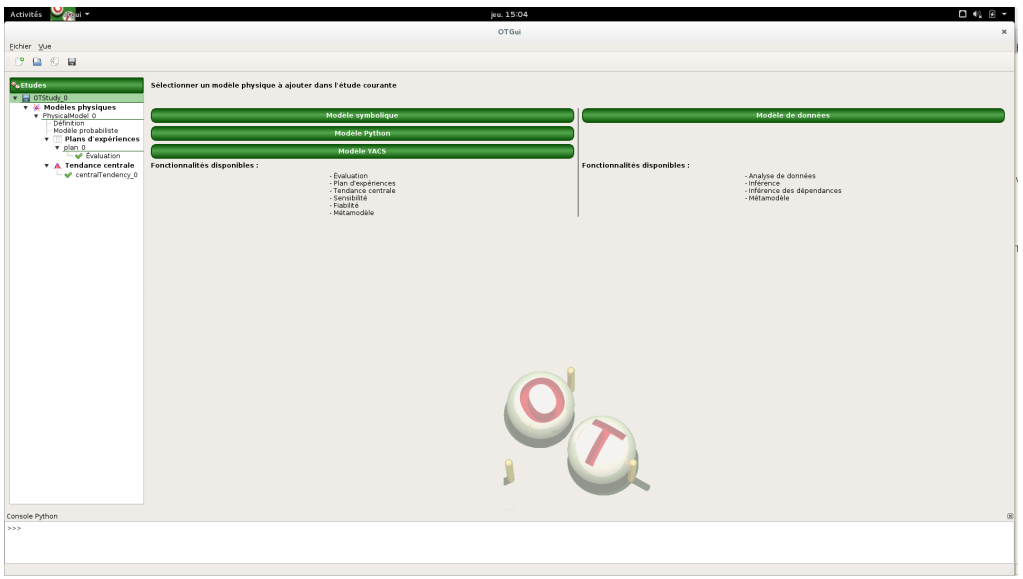


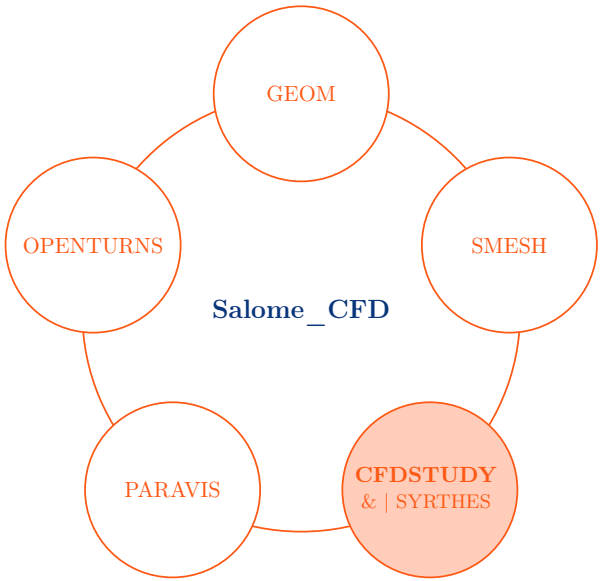


Distant-visualisation / co-visualisation / live-visualisation for Big Data

Live demonstration during the poster session

Salome_CFD in short





UQ studies

Design

Live demonstration during the poster session

Multiphase CFD solver developed in the NEPTUNE project (EDF, Framatome, CEA, IRSN): NEPTUNE_CFD

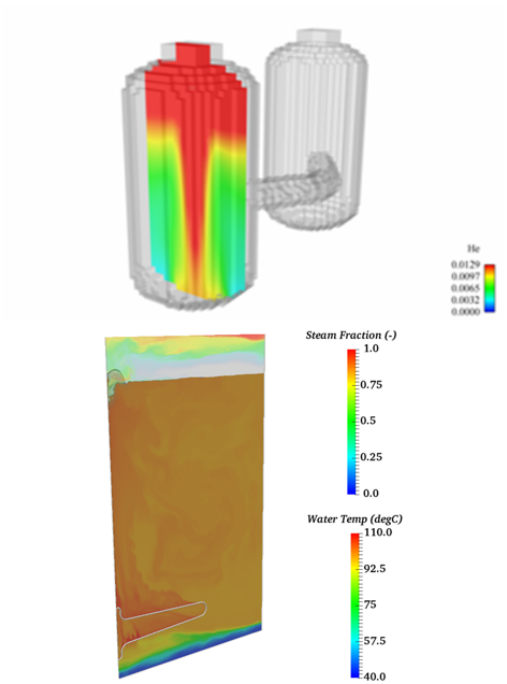
- *n*-fields Eulerian formalism
- Models for: free-surface flows, dispersed bubble-flows (adiabatic or not), particle/gas
- Share HPC capabilities with *Code_Saturne*

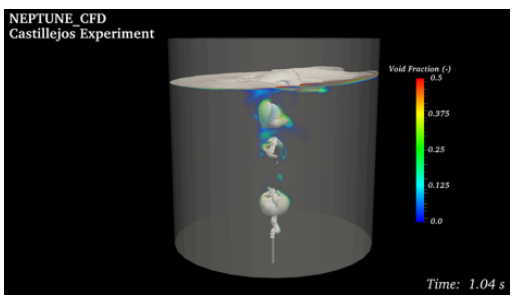
Main nuclear applications

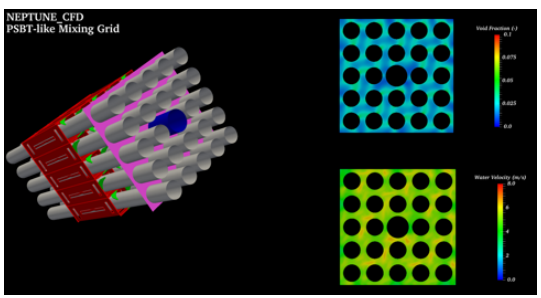
- Departure from Nuclear Boiling (DNB)
- Two-phase Pressurized Thermal Shock (PTS)
- H_2-risk with spray
- Spent-fuel pool in case of accident
- In-vessel corium retention

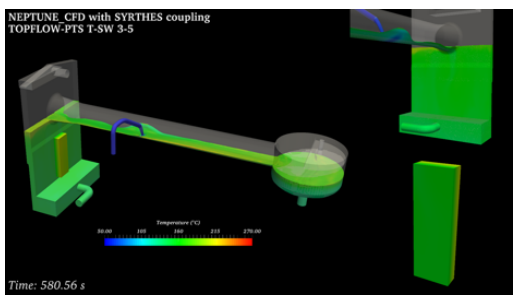
Verification & Validation process: around 70 cases

(from elementary cases to integral cases)





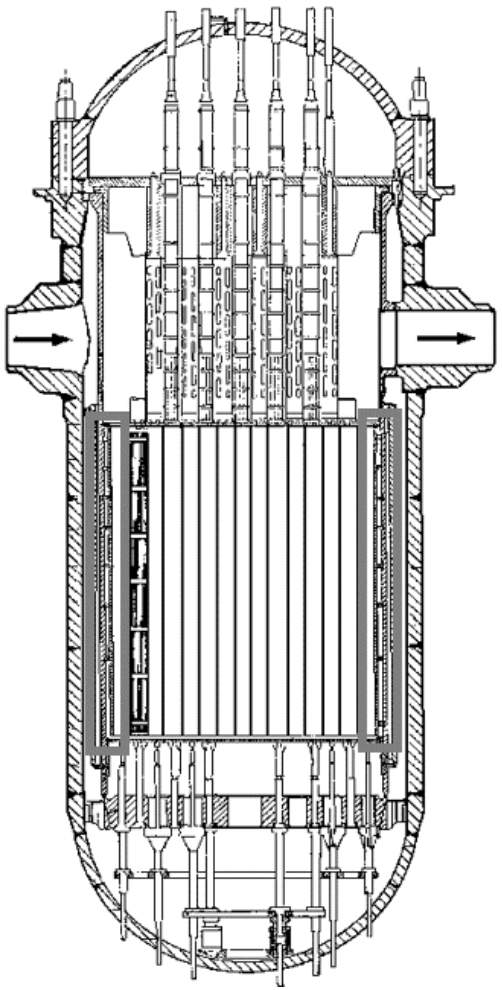


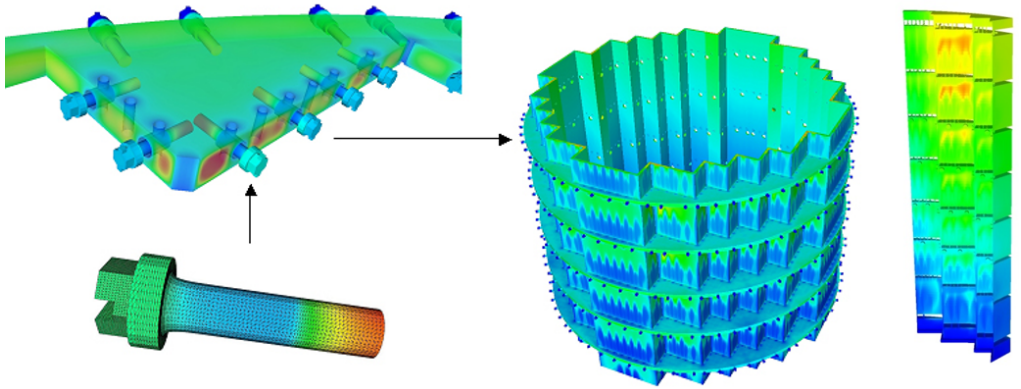


Thermal diffusion in solids and radiative transfer solver: SYRTHES

Thermal load of 1000 bolts in 900 PWR internals

1h30 on 2048 BG cores



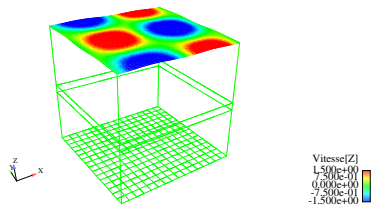


Solid coupled to fluid (*Code_Saturne*)

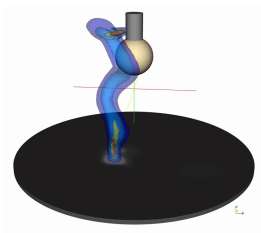
Development of *Code_Saturne* at EDF

Multiphysics modules merged into *Code_Saturne* framework

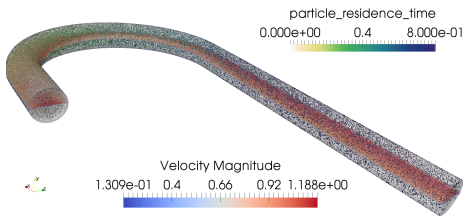
Arbitrary Lagrangian Eulerian (ALE)



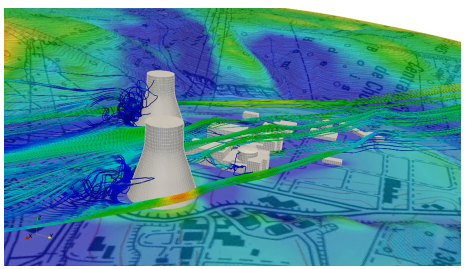
Electric Arcs



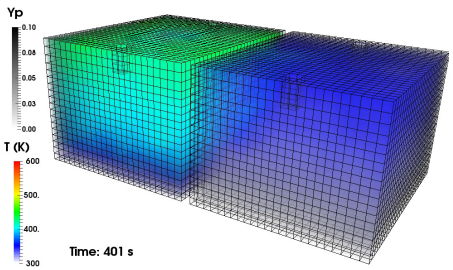
Lagrangian particle tracking



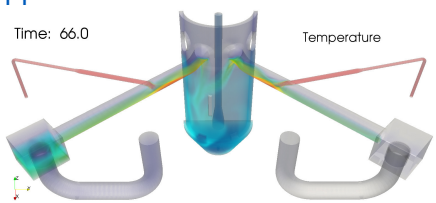
Atmospheric flows



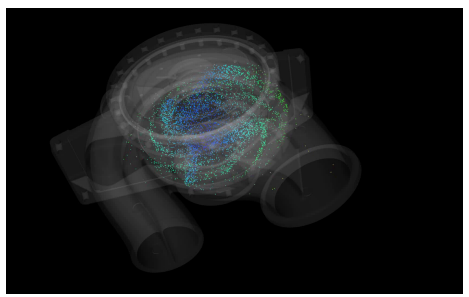
Fire modelling



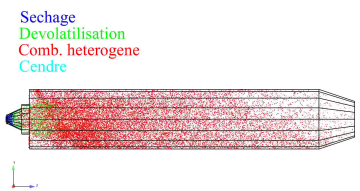
Thermohydraulics for Nuclear applications



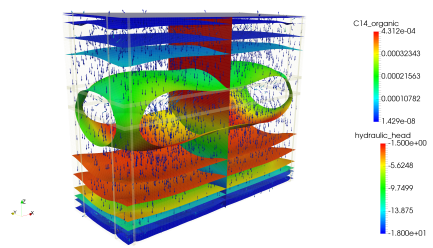
Turbomachinery



Combustion (fuel, coal, gas)



Groundwater flows



Conclusion messages

Thank you for coming!

Vote for the best poster!

(on `www.code-saturne.org`)

Thank you for using *Code_Saturne*!

Enjoy the two days!

WebSite