

2017*Code_Saturne* **Training** Aug. 30th - Sep. 02nd

By EDF Code Saturne Development Team

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Code_Saturne Wechat Public Account

Co-sponsored by Électricité De France XiAn Jiaotong University



Code_Saturne IS EDF'S GENERAL PURPOSE, OPEN SOURCE COMPUTATIONAL FLUID DYNAMICS (CFD) SOFTWARE. http://code-saturne.org STEADY OR UNSTEADY FLOW, LAMINAR OR TURBULENT, INCOMPRESSIBLE OR WEAKLY COMPRESSIBLE, HEAT TRANSFER OR NOT, RANS OR LES MODELS

PROGRAM

* NUMBER OF PARTICIPANTS IS LIMITED TO 40

| Date | Morning | Afternoon |
|--------|---|---|
| Aug.30 | <i>Code_Saturne</i> general introduction: CFD in nuclear power plants, balance methodology, finite volumes, industrial examples. How to use <i>Code_Saturne</i>: Documentation, Users community, Set-up a study and run. Exercise 1-a: Lid-driven cavity – mesh generation and study set-up on an academia 2D page. | Some key characteristics of Code_Saturne: toolchain, high performance computing, etc. Meshing for a Code_Saturne study: format, element types, mesh joining. Exercise 1-b: Lid-driven cavity – calculation and post-processing. |
| Aug.31 | How to develop within user functions of Code_Saturne: main variables and properties, code snippets. Exercise 2: 2D flow in a simplified reactor vessel: variable physical properties, user-defined boundary condition, head loss zone. | Industrial case application with <i>Code_Saturne</i> at EDF. Exercise 3: 3D Stratified flow in a pipe (variable density flow). |
| Sep.1 | Turbulence modelling with Code_Saturne: available models and best practices. Exercise 4-a: 2D flow with conjugate heat transfer - Code_Saturne/SYRTHES coupled simulation. | Mesh quality control:mesh criterion, error estimators, slopetest.Exercise 4-b:2D flow with conjugate heat transfer -Code_Saturne/SYRTHES coupled simulation (continued). |
| Sep.2 | Multi-physics models fused into Code_Saturne framework: Lagrangi- an particle tracking, Fire modelling, Groundwater flows, etc. Introduction of SALOME, Code_Aster and Telemac. | User Club of <i>Code_Saturne</i> in China. Visit tour of XJTU thermal-hydraulics laboratory. |

DISCLAIMER: Code_Saturne is an open source software. EDF has the right to use it and share its expertise on the use of Code_Saturne with third parties. The training will focus on the use of Code_Saturne and by participating in the seminar the attendees intend to share related expertise. The software and its documentation are in the public domain and are furnished "as is". EDF, its affiliates, officers, employees, and agents make no warranty, express or implied, as to the usefulness of the software and documentation for any purpose and they assume no responsibility (1) for the use of the software and documentation; or (2) to provide technical support to users.