भारतीय प्रौद्योगिकी संस्थान रूड़की
Indian Institute of Technology Roorkee

Representatives :
1) Prof. Manish Shrikhande
Professor, Department of Earthquake Engineering
Email : mshrifeq@iitr.ac.in
2) Digvijay Patankar
Senior Research Fellow, Department of Earthquake Engineering
Email : dpatankar@eq.iitr.ac.in

General motivation :

Libre/Free and open source softwares upholds the ethos of teaching learning process. As an instructor of 'Finite Element Analysis' (FEA) course, it is often necessary to introduce students to a software which they can not only use but also dive deeper into it depending upon their interest. At the same time, the software must be as general as possible so as to keep the domain specific information at bay. Code-Aster and Salome-Meca fits into these requirements perfectly. Both of these tools are going to a part of introductory course on FEA.

Major hurdle in adopting Code-Aster and Salome-Meca was language, as earlier the documentation was primarily in French. But now with the machine translation of documentation, it has become a lot easier for non-French users to adopt the code.

Specific use case :

Currently, the representatives are using the software as their daily driver for FE simulations in a project titled 'Seismic response reduction of framed duildings using friction dampers'.

Giving back to the community :

There are a few good books on the use of Code-Aster and Salome-Meca which covers basics of use of the software. However, with the rapid expansion of online teaching-learning process, it was observed that Code-Aster and Salome-Meca had minimal presence in that domain. Hence it is planned to record video tutorials on Code-Aster/Salome-Meca and make them available in public domain. First series of tutorials are already available online at youtube channel https://www.youtube.com/channel/UCgqgtzEDcKJSHf-rFbQooNw . This series covers only the very basic details about use of Code-Aster and Salome-Meca. It deals with only the linear elastic case in statics and dynamics. The next few series which are yet to be published are expected to cover the details of nonlinear analysis.

The tutorials are intended for the beginners and are expected to improve the visibility and adoption of the software.

Fields of interest :

Structural dynamics, Finite Element Analysis, Continuum mechanics, Earthquake engineering, Reliability of structures.

Available resources :

Code-Aster 13.4, Salome-Meca-2018.1
Workstation : HP Z230 - Intel(R) Xeon(R) CPU E3-1241 v3 @ 3.50GHz - 4 Cores with hyperthreading.
Server : Fujitsu PRIMERGY TX300 - Intel(R) Xeon(R) CPU E5-2620 v2 @ 2.10GHz