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## Motivation

Code\_Aster allow teaching students modern methods of analysis, using public property software – opensource software. Providing the information about opensource software, we give the experience of user-configurable software that is available all over the world, without necessity to buy commercial licenses.

Transparency of the language for construct analytical structural model, that is available in Code\_Aster, allow easily understand the process of the finite element analysis. Precision of results is the same in comparison with NASTRAN, ANSYS or others commercial products.

Examination of documentation and examples of Code\_Aster, reveal that creating the center of competence of EDF products in BMSTU for the purposes of writing a diploma, research work and Ph.D. thesis.

## Fields of interests

The center of competence covers the classical range of problems of dynamics and static analysis, solved by the engineers: linear static analysis, modal analysis, thermal analysis, linear dynamics analysis, nonlinear analysis, also: fluid structure interaction, crack growth, acoustics and topological optimization.

## Nature of the uses

Since 2016 and up to the present time, the training course “Introduction to CAE” is available at the department “Aerospace Systems” of BMSTU. The academic curriculum provides for a minimum of one lecture and three laboratory works.

Also Code\_Aster is implemented in yearly and diploma projects. In parallel research validation of Code\_Aster.

The article : Kashfutdinov B.D., Shcheglov G.A. Validation of the Open Source Code\_Aster Software Used in the Modal Analysis of the Fluid-filled Cylindrical Shell. Science and Education: Scientific Publication. 2017;(6):101-117. (In Russ.) DOI:10.7463/0517.0001170

Code\_Aster may be used in courses:

- Strength of materials 3rd year
- Structural mechanics 4th year

We assume that access to the ProNET network will allow us, as well as our students, to find and share the results of their work, increase the capabilities and competences of our department, and implementing Code\_Aster at other departments.

The competence center also involves growth of qualifications of the teachers and making a feasible contribution to the development of the Code\_Aster software.

## IT configuration

The computer class is equipped with 10 workstations based on Intel Core I7 processors with Windows and Ubuntu operating systems.

There is also a computational cluster HP3000: 8 nodes, each with 4 cores.