Meshing and Visualization

A simple model of a quadratic coil, with a surrounding airbox should be created using either `gmsh` or `salome`.

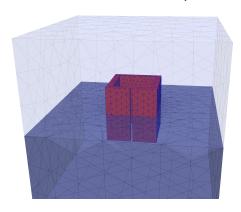The dimensions of the geometry are as follows:

- **length:** 100
- **inner size:** 70×70
- **outer size:** 90×90
- **airbox size:** $300 \times 300 \times 300$

For the solution of the Oersted potential created by a given current, boundary conditions for the current, as well as for the potential need to be specified. Therefor a small slice needs to be created and IDs need to be specified for the corresponding surfaces. Furthermore two different domain IDs need to be introduced in order to distinguish between coil- and air-region.

A FEM mesh should be created and exported to a `.msh` file which will be used by the Finite Element library (FEniCS or Firedrake) in an upcomming exercise. For Salome you can export a `.med` file (**NOTE:** use MED 3.0 format, which is supported by the default gmsh installation), which can be converted to a `gmsh` file using

```
> gmsh -3 test.med
```

Please submit your source files (.geo or .hdf) as well as a PDF with some screenshots, visualizing your results (including the marked domains and surfaces).