

In this thesis, software adgfem is extended to be capable of calculation of non-linear magnetic field in complex geometry. Software adgfem implements discontinuous Galerkin method and so far has been used mainly to solve convection-diffusion problems and lacked streamlined approach to computational mesh generation. This thesis contains step-by-step guideline to creation of complex geometry using software SALOME. This mesh is then converted to format suitable for adgfem using newly written convertor datToAdgfem. Mesh created in this way is then used for calculation of non-linear static magnetic field.