

MEI-55200 Numerical methods for field problems

8. Exercise: boundary element method

Home exercise: Solve by the boundary element method (BEM) the equation

$$-k\Delta u = f,$$

where k and f are constants in a circular disk of radius R with homogeneous boundary conditions $u = 0$ on the whole boundary using an element with constant trial function for u and q_n . Compare to the exact solution. **Hint:** Use symmetry and discretize only one quarter of the disk. Think also how the nonhomogeneous source term should be treated.

To be returned at latest on Monday 30.3.2015