

■ Problems connected with the use of the BEM:

1. The knowledge of the fundamental solution is the main assumption for the use of the BEM! However, the fundamental solution is only known for linear BVP with constant (or special) coefficients.
2. There exist different boundary integral equations for one and the same BVP, and different numerical methods for each equation!
3. The integral equations corresponding to BVP contain singular kernels:
 \Rightarrow Problems with the numerical integration!
4. Theoretical and practical difficulties with the treatment of "singularities" near corners, edges, non-smooth boundary data etc (for collocation!)
5. The BEM-matrices are dense!

■ Fields of Application:

- solid and structural mechanics (e.g. elasticity)
- geomechanics
- acoustics
- electrotechnique (MAXWELL)
- fluid mechanics
- etc

■ FEM \odot BEM

Marriage of FEM and BEM

$\hat{=}$ use the advantages of both worlds !!