

## BEM-based FEM for eddy current problems

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We analyse a method related to Domain Decomposition Methods and Trefftz-FEM. A Boundary Element Method is used to construct trial functions for Finite Element Methods on arbitrary polyhedral meshes. The functions are determined by their Dirichlet values on the boundaries of mesh elements.

While the choice of Dirichlet data for trial functions of polynomial degree is natural in the case of 2-dimensional scalar-valued problems, treatment of 3D vector-valued equations is more complicated. We give a short introduction to the boundary element formulation of eddy current problems and discuss strategies for constructing suited trial functions.

### References:

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