

# Boundary Domain Integral Equations for a Mixed Elliptic BVP with Variable Coefficient in Bounded Domains

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## Abstract

A mixed boundary value problem for the diffusion partial differential equation with variable coefficient is reduced to a system of direct segregated parametrix-based Boundary-Domain Integral Equations (BDIEs). We use a parametrix different from the one employed by Mikhailov in [?, ?] and Chkadua, Mikhailov, Natroshvili in [?]. Mapping properties of the potential type integral operators appearing in these equations are presented in appropriate Sobolev spaces. We prove the equivalence between the original BVP and the corresponding BDIE system. The invertibility and Fredholm properties of the boundary-domain integral operators are also analysed.

Based on joint work with S. Mikhailov

## References

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