

# NUMERICAL IDENTIFICATION OF COEFFICIENT FOR PARABOLIC EQUATION

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## Abstract

In this work, we consider inverse coefficient problem for parabolic equation in 2d dimensional domain. In our case, the diffusion coefficient depends only on the solution itself. Due to the ill-posedness of the problem we take additional information as observations in inner points of the domain through the all time period. Numerical implementation is based on the finite element method using the package FEniCS along with the package dolfin-adjoint. The latter is used for minimize a cost functional. Several examples is given.

**Keywords:** *inverse coefficient problem, parabolic equation, finite element method, FEniCS, dolfin-adjoint*

## References

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