Determining the temperature from the heat equation with mixed boundary data in corner domains

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Abstract

A solvability result in a weighted Sobolev space for the heat equation with time-dependent conductivity, and with mixed boundary conditions in plane corner domains, is presented. Regularity of the solution is discussed. This solvability result opens the possibility of using iterative regularizing methods for the reconstruction of the temperature in non-smooth inhomogeneous and non-isotropic bodies from Cauchy data.