

# 学术报告

Simultaneous identification of diffusion coefficient, spacewise dependent source and initial value for 1D heat equation

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**Time:** 10:00-11:00, 28 Sep (Friday), 2018

**Venue:** Room 111, Center for Applied Mathematics

**Abstract:** In this talk, we consider an inverse problem of determining the diffusion coefficient, spacewise dependent source term, and the initial value simultaneously for a one-dimensional heat equation based on the boundary control, boundary measurement, and temperature distribution at a given single instant in time. By a Dirichlet series representation for the boundary observation, the identification of the diffusion coefficient and initial value can be transformed into a spectral estimation problem of an exponential series with measurement error, which is solved by the matrix pencil method. For the identification of the source term, a finite difference approximation method in conjunction with the truncated singular value decomposition is adopted, where the regularization parameter is determined by the generalized cross-validation criterion. Numerical simulations are performed to verify the result of the proposed algorithm.

欢迎大家参加！