RECONSTRUCTION FORMULA FOR AN INVERSE PARABOLIC SOURCE PROBLEM

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ABSTRACT. The goal of this talk is to establish a reconstruction formula for determining the source spatial dependence $f(x)$ of the source term in a heat equation $\partial_t u - \gamma\Delta u = f(x)\sigma(t)$ in $\Omega \times (0,T)$ assuming $\sigma(t)$ known, from a single internal measurements of the solution in $\mathcal{O}\times(0,T)$. The reconstruction formula is associated to a family of exact controls $v^{(\tau)}$ indexed by $\tau \in (0,T)$. We perform numerical simulations in order to illustrate the feasibility, accuracy and stability of the proposed reconstruction formula.

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