# A global in time existence and uniqueness result for a semilinear integrodifferential parabolic inverse problem in Sobolev Spaces

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**Abstract**

We prove a global in time existence and uniqueness result for an inverse problem appearing in the theory of heat conduction for materials with memory. The novelty lies in the fact this is the first global in time well posed problem in the sense of Hadamard, for semilinear inverse problems of integrodifferential type.