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INVERSE PROBLEMS WITH POINTWISE OVERDETERMINATION FOR SOME QUASILINEAR PARABOLIC SYSTEMS

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In the article, we examine well-posedness questions in the Sobolev spaces of the inverse source problem in the case of a quasilinear parabolic system of the second order. The main part of the operator is linear. The overdetermination conditions are values of a solution at some collection of interior points. It is demonstrated that, in the case of at most linear growth of the nonlinearity, there exists a unique global (in time) solution and the problem is well-posed in the Sobolev classes. The conditions on the data are minimal and the results are sharp.

Key words and phrases: parabolic system, inverse problem, source function, convection-diffusion, heat-and-mass transfer.

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