

Piecewise Linear Control Functions for Semilinear Optimal Control Problems with Directional Sparsity

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This talk is a continuation of the plenary talk given by Eduardo Casas. We discuss the Finite Element discretization of a semilinear parabolic optimal control problem with a directional sparsity functional by piecewise linear control functions. A straight forward discretization of the optimal control problem would be a bad choice for two reasons: The directional sparsity is not preserved and the obtained a priori error estimates have a low order. Therefore we replace the two control norms by appropriate discrete norms. The first task is to show the directional sparsity for the discrete controls. A second topic is the derivation of a priori error estimates for the optimal control and the optimal state.

This talk is a joint work with Eduardo Casas and Mariano Mateos.

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