

SPACE-TIME FINITE ELEMENTS FOR THE OPTIMAL CONTROL OF PARABOLIC EQUATIONS

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ABSTRACT

Recently, [1, 3] introduced space-time finite element methods for parabolic equations which are robust on space-time locally refined meshes and also easy to implement. In this talk, we show how to apply this approach to the optimal control of parabolic equations, cf. [2]. We give a short introduction on optimal control of PDE and point out the inherent problems when discretizing optimal control problems of parabolic equations with classical time-stepping methods. Then, we proceed with an a-priori as well as a-posteriori analysis of our new method. Finally, we conclude with some numerical experiments.

REFERENCES

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