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Numerical Analysis for PDE-Constrained Optimal Control Problems

On the optimal control of wave-type solutions in some reaction-diffusion equations

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Abstract: We investigate optimal control problems for some reaction diffusion equations, where patterns of traveling wave fronts, impulses, spiral waves, and other phenomena appear. In particular, we discuss the consideration of pointwise state constraints. We derive first-order necessary optimality conditions for the associated control problem and present various numerical examples.

This is joint work with Fredi Tröltzsch (Technische Universität Berlin).