

## Optimal Control Problems with Sparsity Terms

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Optimal control problems typically involve objective functions with quadratic control cost terms. By contrast, we consider problems with control cost of L1-type, which is often a more accurate model of the actual control effort. These problems feature sparse optimal solutions, i.e., optimal controls vanishing on sets of positive measure. Efficient numerical solution methods are available. Due to the nondifferentiability of the objective, they rely on regularization of the problem.

We consider in particular problems with a new type of (directional) sparsity terms. These give rise to solutions with striped sparsity patterns, which is favorable for instance in actuator placement problems. In the presentation, we address theory, solution algorithms, and numerical examples.