# Finite Difference Smoothing Solution of Nonsmooth Constrained Optimal Control Problems

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Abstract:
The finite difference method and smoothing approximation for a nonsmooth constrained optimal control problem are considered. Convergence of solutions of discretized smoothing optimal control problems is proved. Error estimates of finite difference smoothing solution are given. Numerical examples are used to test a smoothing SQP method for solving the nonsmooth constrained optimal control problem.