

## Optimal Control of a Simplified Signorini Problem

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The Signorini problem describes the deformation of an elastic body which is pushed against a rigid surface. It can be formulated as an elliptic variational inequality of first kind with unilateral constraints at the boundary. We consider a simplified version governing an optimal control problem. The state is discretized using linear finite elements while a variational discretization is applied to the control. We derive a priori error estimates for the control and state based on strong stationarity and a quadratic growth condition. The convergence rates depend on  $H^1$  and  $L^2$  error estimates of the simplified Signorini problem.

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