Boundary Element Methods
for Parabolic Boundary Control Problems

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Abstract: Boundary optimal control problems with control constraints governed by the linear heat equation are analyzed. We propose boundary element approaches to solve the coupled optimality system. The related system of boundary integral equations is obtained in a symmetric formulation. We ensure the unique solvability of the resulting variational inequality and we derive a priori error estimates of Galerkin boundary element discretizations. Some numerical tests confirm the analytical results.

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