Optimal control of singularly perturbed
advection-diffusion-reaction problems with control
constraints

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In this talk, we consider the numerical analysis of discretized optimal control problems governed by a linear advection-diffusion-reaction equation with pointwise control constraints. The standard Galerkin discretization is stabilized via the local projection approach which leads to a symmetric optimality system at the discrete level. The optimal control problem simultaneously covers distributed and Robin boundary control. In the singularly perturbed case, the boundary control at characteristic parts of the boundary can be seen as regularization of a Dirichlet boundary control. Some numerical tests confirm the analytical results.

References:


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