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Armin Rund  
**PDE-constrained optimization with switching controls**

Institut für Mathematik und Wiss Rechnen  
Heinrichstr 36  
8010 Graz  
Austria  
`armin.rund@uni-graz.at`  
Karl Kunisch  
Christian Clason

The talk is concerned with optimal control problems for parabolic differential equations subject to switching penalties. Based on sparse control we formulate convex and nonconvex penalty functions that promote switching between different control components. After suitable regularizations both problems can be solved using semismooth Newton-Krylov methods with adjoint-based exact first and second derivatives. The convex and nonconvex formulations are compared in numerical experiments.