Universität Hamburg
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Fakultät für Mathematik, Informatik
und Naturwissenschaften
Fachbereich Mathematik

Donnerstag, den 10. Dezember 2026, um 14:30 Uhr, MIN-F, Hörsaal 3

Prof. Dr. Timo Reis*
(Technische Universität Ilmenau, Institut für Mathematik)

"Value functions for infinite-dimensional linear-quadratic optimal control problems - analysis and numerics"

Zusammenfassung/Abstract:

Infinite-dimensional linear-quadratic optimal control problems naturally arise for systems governed by partial differential equations, in particular when actuation and observation take place at the boundary. The talk presents a Newton-Kleinman approach for the computation of value functions in a system-node framework that allows for unbounded control and observation operators. The emphasis is on an operator-theoretic formulation of the iteration that does not rely on the classical algebraic Riccati equation, together with its analytical foundations and numerical realization. The method is illustrated by PDE examples with boundary control and observation.

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