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Fakultät für Mathematik
Oskar-Morgenstern-Platz 1
A-1090 Vienna
Austria

<https://owos.univie.ac.at>

ONE WORLD OPTIMIZATION SEMINAR

July 20th, 2020 @ 15:00 CEST (Central European Summer Time)

XIAOMING YUAN

(University of Hong Kong)

From Optimization to Optimal Control: An Algorithmic Design Perspective

Abstract. Optimal control problems model the procedures of controlling some physical processes with certain objectives; usually they are modeled as optimization problems with PDE and other constraints. It is generally nontrivial to find efficient numerical solvers for these problems, especially for time-dependent cases. Typical difficulties include the extremely high dimensionality after discretization, ill-conditioned matrices of the resulting systems of linear equations, and possibly complicated coupling of PDEs with some other simple constraints. We will show how to extend some well-developed efficient operator splitting algorithms in the context of convex optimization problems to some elliptic and parabolic optimal control problems. Particularly, we will highlight some computational techniques such as preconditioning to derive trustworthy numerical schemes for various optimal control problems.

The link of the zoom-room of the meeting and the corresponding password will be announced the day before the talk on the mailing list of the seminar, to which one can subscribe on <https://owos.univie.ac.at>.