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ONE WORLD OPTIMIZATION SEMINAR

April 4ᵗʰ 2022 @ 15:30 CEST (Central European Summer Time)

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Faster Lagrangian-Based Methods in Convex Optimization

Abstract. This talk presents a simple unifying framework to analyze and improve the convergence rate analysis of Lagrangian-based methods for convex optimization problems. Towards this goal we first introduce the notion of a nice primal algorithmic map, which plays a central role in the unification and in the simplification of the analysis of most Lagrangian-based methods. Equipped with a nice primal algorithmic map, we then define a versatile generic scheme, which allows for the design and analysis of Faster LAGrangian (FLAG) methods with a new provably sublinear rate of convergence expressed in terms of functions values and feasibility violation of the original (non-ergodic) generated sequence. To demonstrate the power and versatility of our approach and results, we show that most well-known iconic Lagrangian-based schemes admit a nice primal algorithmic map, and hence share the new faster rate of convergence results within their corresponding FLAG.

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.