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ONE WORLD OPTIMIZATION SEMINAR

March 15th 2021 @ 15:30 CET (Central European Time)

FRANK E. CURTIS

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SQP Methods for Deterministically Constrained Stochastic Optimization

Abstract. Stochastic gradient and related methods for solving stochastic optimization problems have been studied extensively in recent years. It has been shown that such algorithms and much of their convergence and complexity guarantees extend in straightforward ways when one considers problems involving simple constraints, such as when one can perform projections onto the feasible region of the problem. However, settings with general nonlinear constraints have received less attention, and many of the approaches that have been proposed for solving such problems resort to using penalty or (augmented) Lagrangian methods, which are often not the most effective strategies. In this work, we propose and analyze stochastic optimization algorithms for deterministically constrained problems based on the sequential quadratic optimization (commonly known as SQP) methodology. We discuss the rationale behind our proposed techniques, convergence in expectation and complexity guarantees for our algorithms, and the results of preliminary numerical experiments that we have performed.

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>.