
Einladung zu einem Vortrag
im Rahmen des DK-Seminars des Karl Popper Kollegs von

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zum Thema

Projection methods for stochastic variational inequalities

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Kurzfassung:

We introduce three projection type methods for stochastic variational inequalities. The first one considers stochastic variational inequalities with monotone operators defined as the expected value of a random operator. We assume the feasible set is the intersection of a large family of convex sets. We propose a method that combines stochastic approximation with incremental constraint projections meaning that at each iteration, a step similar to some variant of a deterministic projection method is taken after the random operator is sampled and a component of the intersection defining the feasible set is chosen at random. Such sequential scheme is well suited for applications involving large data sets, online optimization and distributed learning. In the second one we propose an extragradient method with stepsizes bounded away from zero for stochastic variational inequalities requiring only pseudo-monotonicity. We provide convergence and complexity analysis, allowing for an unbounded feasible set, unbounded operator, non-uniform variance of the oracle and, also, we do not require any regularization. In the third one we propose a stochastic extragradient method for stochastic variational inequalities with a linear search, requiring only pseudo-monotonicity of the operator and no knowledge of the Lipschitz constant L . We provide convergence and complexity analysis, allowing for an unbounded feasible set, unbounded operator, non-uniform variance of the oracle and we do not require any regularization.

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