

Some results about optimal control problems under uncertainty with or without constraints

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ABSTRACT

In this talk we will introduce some models arising in optimal control of semilinear elliptic equations with random data. Moreover, we will discuss the convergence analysis for a stochastic gradient method which provide an iterate converging (almost surely) to a stationary point of the optimization problem. The cases with and without control constraints will be treated with different approaches and, in turn, we obtain different sufficient conditions for the convergence of the method. This talk is based on the results in the manuscripts [1, 2].

References

- [1] C. Geiersbach, T. Scarinci: *Stochastic Proximal Gradient Methods for Nonconvex Problems in Hilbert Spaces*, Computational Optimization and Applications, 2021, 78(3), pp. 705-740.
- [2] C. Geiersbach, T. Scarinci: *A stochastic gradient method for a class of nonlinear PDE-constrained optimal control problems under uncertainty*, preprint available on arxiv.