On a Risk Averse Formulation for Complementarity Problems under Stochastic Uncertainty

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This talk addresses structure and stability analysis of a risk averse formulation for complementarity problems under stochastic uncertainty. In most of the literature on complementarity problems full knowledge of the data is indispensable. In recent years, however, the importance of including data uncertainty became more and more apparent. We present a deterministic, risk averse formulation for the mentioned problem class inspired by the expected residual minimization (ERM) model. Following that, a stability analysis in addition to some notes on the structure of the problem type are presented. In particular, qualitative stability of the optimal values under perturbation of the underlying Borel probability measure will be investigated with respect to weak convergence of probability measures. Building on the findings obtained in this context and on previous work in stochastic programming, a first approach to decomposition will be shown.

References

[1] Burtscheidt, J., Claus, M.: A Note on Stability for Risk Averse Stochastic Complementary Problems, Journal of Optimization Theory and Applications 172(1), pp. 298-308, 2017.