

Robust Optimization for Environmental and Energy Planning

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Abstract. Uncertainty is often present in environmental and energy economics. Traditional approaches to optimization under uncertainty, e.g., stochastic programming, chance-constrained programming or stochastic dynamic programming, encounter the most severe numerical difficulties because models in this area are large and complex, already in their deterministic formulation. The goal of the present chapter is to introduce a relatively new field, known as robust optimization, as an alternative to traditional methods and formulations. Through an illustrative example, we suggest ways of putting robust optimization at work in environmental and energy optimization models.

Keywords. Robust optimisation, energy planning model.