

JOINT CHANCE-CONSTRAINED PROGRAMMING WITH GENERALIZED EXPONENTIAL RANDOM PARAMETERS

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ABSTRACT

In this paper Joint Chance-constrained Programming (JCCP) models are considered when random parameters are independent and follow the generalized exponential distributions $GE(\lambda_i, \mu_i, \alpha_i)$. The main objective of this paper is to suggest an iterative approach to transform a probabilistic programming model into a sequence of equivalent deterministic linear programming models, which allow introducing several alternative policies for decision maker, then the linear models are solved using the Simplex method that is through two phases. Also, the suggested approach allows to process sensitivity analysis for the unknown probability of each single constraint included in the set of joint constraints. Finally, a numerical example introduced to illustrate the two phases and the alternative policies as well.