1010-49-123   **Ana-Maria Croicu*** (`acroicu@math.fsu.edu`), Florida State University, Tallahassee, FL 32306-4120, and **M. Yousuff Hussaini**. *On the Expected Optimal Value and the Optimal Expected Value.*

Approaches to stochastic optimization have followed a variety of modeling philosophies, but little has been done to systematically compare different models found in the literature. The present work is concerned with the basic concepts and a comparison between them underlying optimality under uncertainty, which is ubiquitos in all realistic problems of science and engineering. Specifically, it discusses two basic ideas: the expected optimal criterion and the optimal expected criterion. We show that the operators of expectation and optimization do not commute, and that the expected optimal criterion provides a higher probability of lower risk compared to the latter criterion, at least in some illustrative cases. (Received August 23, 2005)

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