Decision-Making Under Uncertainty Processed by Lattice-Valued Possibilistic Measures

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Abstract: The notion and theory of statistical decision functions are re-considered and modified to the case when the uncertainties in question are quantified and processed using lattice-valued possibilistic measures, so emphasizing rather the qualitative than the quantitative properties of the resulting possibilistic decision functions. Possibilistic variants of both the minimax (the worst-case) and the Bayesian optimization principles are introduced and analyzed.