Financial Applications of Fuzzy Reasoning and Fuzzy Optimization

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PLENARY TALK

Abstract—In project management possibility distributions are often used for modelling imprecise future cash flows. In portfolio management it might also be easier to estimate the possibility distributions of rates of return on securities rather than the corresponding probability distributions. Imperfect knowledge of the returns on the assets and the uncertainty involved in the behavior of financial markets may be captured by means of fuzzy numbers and/or fuzzy constraints. Fuzzy reasoning and fuzzy optimization may also be useful when decision makers are provided with linguistic information. We will show how to apply fuzzy reasoning to fuzzy real option pricing and to portfolio management with imprecise future data.