Abstract:
"We consider a real-options investment problem by an ambiguity averse decision-maker for which the project value follows a Lévy process. The inclusion of discontinuous rare events (`jumps') increases "volatility" and creates ambiguity due to inconclusive data and market incompleteness. We use ambiguity theory with variational preferences to establish a pricing kernel to value real options and determine the optimal investment decision. We highlight two opposing forces: the ambiguity effect reduces option value and hastens investment, while the volatility effect of the jumps has the opposite impact. We develop a general ambiguity model and comparative statics for variational ambiguity preferences with Lévy processes to identify conditions when one or the other effect dominates, and provide explicit expressions for the option value and the optimal investment threshold in the case with multiple-prior preferences."