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Solving long term optimal investment problems with Cox-Ingersoll-Ross interest rates

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Abstract. A large deviations control problem is treated for a long term optimal investment on a financial market with a bank account and a risky stock, both of which are affected by a stochastic factor described as Cox-Ingersoll-Ross's interest rates. The solution is presented in explicit form by investigating the effective domain of the associated risk-sensitive control problem in risk-seeking case.

Key words: large deviations control, risk-sensitive control, long-term investment, power utility, CIR-interest rates