Abstract

Symmetry Analysis of the Hamilton-Jacobi-Bellman Equation Arising in Financial Mathematics [†]

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We outline symmetry analysis on the Hamilton-Bellman-Jacobi equation presented by Heath in [1] as an equation for mean-variance hedging and analyzed by Leach in [2] using classical symmetry analysis. We further apply modified symmetry analysis on this equation and compare our analytic results with numerical solutions. We do this by introducing a new infinitesimal parameter into the group generators [3]. This helps us solve the unintegrable solutions usually appearing in invariant solutions.

References

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