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State estimation under non-Gaussian Levy noise: A modified Kalman filtering method

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The Kalman filter is extensively used for state estimation for linear systems under Gaussian noise. When non-Gaussian L\'evy noise is present, the conventional Kalman filter may fail to be effective due to the fact that the non-Gaussian L\'evy noise may have infinite variance. A modified Kalman filter for linear systems with non-Gaussian L\'evy noise is devised. It works effectively with reasonable computational cost. Simulation results are presented to illustrate this non-Gaussian filtering method.

Subjects:	**Dynamical Systems (math.DS)**; Information Theory (cs.IT); Learning (cs.LG); Probability (math.PR); Machine Learning (stat.ML)
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