Abstract

State estimation is the common problem in every area of engineering. There are different filters used to overcome the problem of state estimation like Kalman filter, Particle filters etc. Kalman Filter is popular when the system is linear but when the system is highly non-linear then the different derivatives of Kalman Filter are used like Extended Kalman Filter (EKF), Unscented Kalman filter. But these estimation techniques require tuning of process and noise covariance matrices. The different optimization techniques are used to tune the filter parameters of EKF. In this paper, various optimization techniques have been studied for non-linear state estimation based on EKF.

References


**Index Terms**

Computer Science  
Signal Processing

**Keywords**

Gravitational Search Algorithm, Extended Kalman Filter, state estimation, Tuning of EKF.