



A TWO PARALLEL EXTENDED KALMAN FILTERING ALGORITHM FOR THE ESTIMATION OF CHIRP SIGNALS IN NON-GAUSSIAN NOISE (WedPmPO3)

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★ Abstract :

In this paper, we address the problem of the estimation of chirp signals in " ϵ -contaminated" impulsive noise using Kalman filtering technique. We consider an estimation method based on the exact non linear state space representation of the chirp signal. The observation noise's probability density function is assumed to be a sum of two-component Gaussians weighted by the probability of appearance of the impulsive and gaussian noises in the observations. We propose to use two extended Kalman filters (PEKF) operating in parallel as an alternative to the usual methods which generally use either clipping or freezing based algorithms. Simulation results show that the PEKF compared to the robust extended Kalman filter (REKF) based on Huber's function is less sensitive to impulsive noise and gives better estimates of the chirp parameters.