An improved robust filter algorithm for maneuvering target tracking with the unknown time-varying noise covariance

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Abstract

In the real environment, the unstable radar measurement noise can degrade the tracking performance of the maneuvering target. In this Letter, the iterative formulation of the noise is simplified, and the noise-adaptive matrix is introduced to calculate the fading factor of the strong tracking algorithm, so that the effect of measurement noise on the fading factor can be corrected in real time. The superior performance of the proposed method is verified by comparison with three existing improved methods on a typical example.

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An improved robust filter algorithm for maneuvering target tracking with the unknown time-varying noise available at https://authorea.com/users/500069/articles/588203-an-improved-robust-filter-algorithm-for-maneuvering-target-tracking-with-the-unknown-time-varying-noise-covariance