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论文与报告

基于M 带小波的动态多尺度系统融合估计

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摘要
研究一类动态多尺度系统的融合估计方法，这类系统具有已知的动态系统模型约束，由具有不同采样率的多个传感器独立观测，传感器的采样率以$M(M > 2)$倍递减. 用M 带小波变换来拟合状态在各尺度空间的投影关系，建立了满足标准卡尔曼滤波条件的系统模型. 进行卡尔曼滤波后，可以获得系统状态最优估计值. 仿真结果验证了该动态多尺度系统融合估计算法的有效性.

关键词 M带小波 动态多尺度系统 估计

分类号 TP13

Fusion and estimation of dynamic multiscale system based on *M*-band wavelet

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Abstract
In this paper, the fusion and estimation algorithm of a class of dynamic multiscale systems is investigated. This system is subject to the known dynamic system model, and is measured by multiple sensors with di®erent sampling rates. The sampling rates decrease by a factor of M(M>2). M-band wavelet is used to approximate the projection relationship between the scale spaces, and system model that satisfies Kalman filter condition is built. After performing Kalman filter, the optimal state estimation can be obtained. Simulation results are given to obtain insight into the effectiveness of our method.

Key words M-band wavelet dynamic multiscale system estimation

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