

Abstract Submitted  
for the DFD10 Meeting of  
The American Physical Society

**Game-theoretic Kalman Filter** CHRISTOPHER COLBURN, THOMAS BEWLEY, UC San Diego — The Kalman Filter (KF) is celebrated as the optimal estimator for systems with linear dynamics and gaussian uncertainty. Although most systems of interest do not have linear dynamics and are not forced by gaussian noise, the KF is used ubiquitously within industry. Thus, we present a novel estimation algorithm, the Game-theoretic Kalman Filter (GKF), which intelligently hedges between competing sequential filters and does not require the assumption of gaussian statistics to provide a “best” estimate.

Christopher Colburn  
UC San Diego

Date submitted: 06 Aug 2010

Electronic form version 1.4