Kalman Filter for Bilinear Systems with Application

Authors : Abdullah E. Al-Mazrooei

Abstract : In this paper, we present a new kind of the bilinear systems in the form of state space model. The evolution of this system depends on the product of state vector by its self. The well known Lotak Volterra and Lorenz models are special cases of this new model. We also present here a generalization of Kalman filter which is suitable to work with the new bilinear model. An application to real measurements is introduced to illustrate the efficiency of the proposed algorithm.