Subject: statistical filtering algorithms in IDL
Posted by robb on Thu, 31 Oct 2002 19:12:39 GMT
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Has anyone implemented the Kalman filter in IDL? From what I understand this filter technique is built into every GPS receiver and it is an excellant way to increase the signal to noise ratio (SNR) in many different applications. I'm interested in using this filter to help resolve weak signals in the output of a single-photon sensing APD detector. The output of such a detector is a "TTL" pulse for every detected photon and the count-rate history of the detector is recorded as the # of pulses in short time intervals (10-100 usec) - a digital record. The noise in the system comes from various sources: shot noise in the APD itself, optical noise from the light source (Raman scatter, etc) and other sorts of unwanted photons - all stochastic. The Kalman filter or extended Kalman filter might really help increase the SNR. I'm looking for a jump start in implementing this algorithm.