

In the Thesis we study the problem of linear filtration of Gaussian signals in finite-dimensional space. We use the Kalman-type equations for the filter to show that the filter depends continuously on the signal. Secondly, we show the same continuity property for the covariance of the error and verify existence and uniqueness of a solution to an integral equation that is satisfied by the filter even under more general assumptions. We present several examples of application of the continuity property that are based on the theory of stochastic differential equations driven by fractional Brownian motion.