

Some results on estimation of the noise covariance function in time continuous regression model

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In the lecture an exponential bound for the probabilities of large deviations of the normalized residual correlogram as an estimator of a random stationary Gaussian noise covariance function in a functional nonlinear regression model is obtained. The new results on weak consistency of the residual correlogram is a corollary of this fact. Besides the functional central limit theorem in the space of continuous functions for the normalized residual correlogram is proved. The result obtained shows that the limiting sample continuous Gaussian process coincides with the limiting process in the central limit theorem for standard correlogram of the Gaussian stochastic process.