

*Some Problems in Time Series Analysis**

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1. Introduction. The object of this paper is to investigate certain aspects of some problems concerning stochastic processes, both one-dimensional and multi-dimensional (cf. [4]).

One problem investigated (Sec. 2) in this paper concerns linear estimation of regression coefficients. Suppose that a discrete parameter process $y_t = x_t + m_t$ has been observed at time $t = 1, 2, \dots, n$, and that $Ex_t \equiv 0$, $Ey_t = m_t$. Assume that

$$m_t = \sum_{\nu=1}^p \gamma_{\nu} \varphi_t^{(\nu)}$$

i.e. the means m_t are linear expressions in *unknown* parameters $\gamma_1, \dots, \gamma_p$:

$$m = \Phi \gamma$$

where

$$m = \begin{bmatrix} m_1 \\ \vdots \\ m_n \end{bmatrix}, \quad \gamma = \begin{bmatrix} \gamma_1 \\ \vdots \\ \gamma_p \end{bmatrix},$$

and Φ is an $(n \times p)$ matrix of known constants. The vector γ is to be estimated linearly in

$$y = \begin{bmatrix} y_1 \\ \vdots \\ y_n \end{bmatrix},$$

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