Pchelintsev E. A., Perelevskiy S. S. (Tomsk, Russia) — **Estimation of the drift coefficient in diffusion processes.** Let on the probability space $(\Omega, \mathcal{F}, \mathbf{P})$ be defined the following stochastic differential equation : $dy_t = S(y_t)\,dt + dw_t$, $0 \le t \le T$, where $(w_t)_{t\ge 0}$ is a scalar standard Wiener process, the initial value y_0 is a given constant and $S(\cdot)$ is a unknown function. The problem is to estimate the function $S(x)$, $x \in [a, b]$, from observations $(y_t)_{0\le t\le T}$ and to obtain sharp non-asymptotic bounds for a quadratic risk. In [1] for estimating the function S have been proposed an asymptotically efficient model selection procedure based on weighted LSE. In this paper was proposed a model selection procedure based on improved estimates, which outperforms in mean square accuracy the estimate from [1]. For improvement of the precise we use the special shrinkage estimates from [2, 3]. Sharp non-asymptotic oracle inequality for a quadratic risk of the proposed estimate was obtained.

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