Rakhimova G. G. (Tashkent, Uzbekistan) — **Sequential estimation of functionals of an unknown distribution function by fixed-width confidence intervals.**

Consider on (Ω, F, P) random variables $\xi_1, \xi_2, ..., \xi_n$ with unknown distribution function $F(x), x \in R_1, \in$F, where F is family of distributions functions, that meet certain conditions regularity. To estimate the functional $\theta(F)$ of distributions functions $F(x)$ consider consistency estimator $\theta_n(F) = \theta_n(\xi_1, \xi_2, ..., \xi_n)$, which is decomposed

$$\theta_n(F) = \theta(F) + [\theta_n(F) - E(\theta_n(F))] + [E(\theta_n(F)) - \theta(F)] = \theta(F) + \sum_{k=1}^{n} Y_n(F, \xi_k) + Z_n,$$

where the values $Y_n(F, \xi_k), 1 \le k \le n$ and Z_n such that, there are the numbers $\alpha > 0$ and $\sigma^2(F) > 0$, that $n^\alpha \sum\limits_{k=1}^{n} Y_n(F, \xi_k)$ is asymptotically normal with mean 0, dispersion $\sigma^2(F)$and $n^\alpha Z_n \to 0$ in $n \to \infty$. Obtained fixed-width confidence interval $I(N_\varepsilon) = [\theta_{N_\varepsilon}(F) - \varepsilon, \theta_{N_\varepsilon}(F) + \varepsilon], \varepsilon > 0$ for $\theta(F)$ which is asymptotic consistency in the sense of Chow and Robbins (see [1]), here stopping time N_ε is asymptotic efficiency in the sense of Chow and Robbins.

REFERENCES

1. *Y. S. Chow, H. Robbins* On the asymptotic theory of fixed-width sequential confidence intervals for the mean, Ann. Math. Statist., 1965, т.36, p. 457-462.