

Formanov Sh. K. (Tashkent, Uzbekistan), **Presman E. L.** (Moscow, Russia) — **On one modification of the conditions of Lindeberg and Rotar’.**

We consider a triangular array scheme for the sums of independent (within each row) random variables with finite variances and zero expectations. Without restriction of generality we suppose that the sum of variances within each row equals to 1. Lindeberg introduced a characteristic that to each $\varepsilon > 0$ puts into correspondence the sequence of sums of the variances of ε -tails of distributions of summands. It is well known (see., for example, [1], Ch III, §4), that Lindeberg condition (convergence of this sequence to zero for any $\varepsilon > 0$) is sufficient for the normal convergence of the sequence of corresponding sums, and in case of the uniform infinite smallness of the summands the Lindeberg condition is also necessary one.

To each $\alpha > 0$ we put into correspondence a sequence of sums of absolute moments of the order $2 + \alpha$ for the distributions of summand truncated at the unit level, and its sum with the Lindeberg characteristic corresponding to $\varepsilon = 1$, we call α - characteristic. We show, first, that if α -characteristic for some $\alpha > 0$ converges to zero, then the Lindeberg condition holds and the convergence to zero holds for any $\alpha > 0$, and second, that if the Lindeberg condition holds, then α -characteristic tends to zero for any $\alpha > 0$. Thus, to check the normal convergence, instead of checking the convergence to zero of the Lindeberg characteristic **for any** $\varepsilon > 0$, it is sufficient to check that there **exists** such $\alpha > 0$ that α -characteristic converges to zero.

Rotar (see [2] or [1] (Ch III, §5)) considered an analogue of the Lindeberg characteristic and showed that the convergence of his characteristic to zero for any $\varepsilon > 0$ is a necessary and sufficient condition for normal convergence without the assumption of uniform infinite smallness of summands. We give the corresponding modification for the characteristic of Rotar’.

It should be noted that in the articles [3] and [4] the characteristic equal to the sum of α -characteristics for $\alpha = 1$ and $\alpha = 2$ (the third and fourth moments of the truncated distributions) appeared in the estimation of the convergence rate. In [5] it was shown that the convergence to zero of the Ibrahimov-Osipov-Essen characteristic is equivalent to the Lindeberg condition.

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3. *I. A. Ibragimov and L. V. Osipov.* On an Estimate of the Remainder in Lindeberg’s Theorem. Theory Probab. Appl., 1966, vol. 11, №1, pp.125-128.
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5. *Hall P.* Rates of convergence in the central limit theorem. Pitman Adv. Publ. Progr. Boston-London. 1984. 257 p.