

**Section «Mathematics and mechanics»**

**Asymptotic properties of trimmed sums and their applications**

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Trimming is a standard method to decrease the effect of large sample elements in statistical procedures used, e.g., to construct robust estimators and tests. Trimming of i.i.d. sequences has been extensively studied from the 1960s and most basic problems of the theory have been solved, except a few isolated problems, e.g. the Central Limit Theorem under modulus trimming. In contrast, very little is known about trimming of dependent sequences, even though results here would be very useful e.g. in the statistics of heavy-tailed processes.

We establish a new approach to CLT for trimmed i.i.d. random variables and extend it to the case of mixing sequences, demonstrating applications in metric theory of continued fractions. We also provide a functional CLT for AR(1) processes and develop change point tests for the unknown parameter of the process.

**References**

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