Abstract: We consider a vector of numbers of clusters at different distance levels of \( n \) independent identically distributed random variables uniformly distributed on \([a, b]\). We prove asymptotic normality of this vector when the ends \( a, b \) are known or are estimated from the sample. Basing on these asymptotic results we propose new tests for uniformity, called *cluster tests*. We also present results of a simulation study showing empirical behaviour of these tests.

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The full text is available [here](#).