

# A dichotomy for CLT in total variation

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Let  $\eta_i, i \geq 1$ , be a sequence of independent and identically distributed random variables with finite third moment, and let  $\Delta_n$  be the total variation distance between the distribution of  $S_n := \sum_{i=1}^n \eta_i$  and the normal distribution with the same mean and variance. We establish the dichotomy that either  $\Delta_n = 1$  for all  $n$  or  $\Delta_n = O(n^{-1/2})$ .