

ON THE ORDER OF APPROXIMATION IN THE RANDOM CENTRAL  
LIMIT THEOREM FOR  $m$ -DEPENDENT RANDOM VARIABLES

B. L. S. Prakasa Rao  
M. Sreehari

*Abstract:* We consider a random number  $N_n$  of  $m$ -dependent random variables  $X_k$  with a common distribution and the partial sums  $S_{N_n} = \sum_{j=1}^{N_n} X_j$ , where the random variable  $N_n$  is independent of the sequence of random variables  $\{X_k, k \geq 1\}$  for every  $n \geq 1$ . Under certain conditions on the random variables  $X_k$  and  $N_n$ , we obtain the limit distribution of the sequence  $S_{N_n}$  and the corresponding rate of convergence after suitable normalization.

**2000 AMS Mathematics Subject Classification:** Primary: 60F05; Secondary: 60G99.

**Keywords and phrases:** Random central limit theorem,  $m$ -dependent random variables, Berry–Esseen type bound, approximation.

THE FULL TEXT IS AVAILABLE [HERE](#)