

# Convergence in law of partial sum processes in $p$ -variation norm

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Let  $X_1, X_2, \dots$  be a sequence of random variables and let  $2 < p < \infty$ . For each  $n \in \mathbb{N}$  let  $S_n$  be the  $n$ -th partial sum process  $S_n(t) = X_1 + \dots + X_{[nt]}$ ,  $t \in [0, 1]$  and let  $V_n^2 = X_1^2 + \dots + X_n^2$ . We shall discuss a convergence in law of  $n^{-1/2}S_n$  and  $V_n^{-1}S_n$  as  $n \rightarrow \infty$  to a Wiener process in  $p$ -variation norm under various assumptions on  $X_1, X_2, \dots$