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Michael B Woodroffe* (michaelw@umich.edu), Statistics Department, University of Michigan, Ann Arbor, MI 48109, and **Dalibor Volny** and **Ou Zhao**. *A Central Limit theorem for Partial Sums of a Reversible Processes with Non-linear Growth of Variance.*

Kipnis and Varadhan showed that for an additive functional, S_n say, of a reversible Markov chain the condition $E(S_n^2)/n \rightarrow \kappa \in (0, \infty)$ implies the convergence of the conditional distribution of $S_n/\sqrt{E(S_n^2)}$, given the starting point, to the standard normal distribution. We revisit this question under the weaker condition, $E(S_n^2) = n\ell(n)$, where ℓ is a slowly varying function. It is shown by example that the conditional distribution of $S_n/\sqrt{E(S_n^2)}$ need not converge to the standard normal distribution in this case; and sufficient conditions for convergence to a (possibly non-standard) normal distribution are developed. (Received August 30, 2009)