WEAK LAWS OF LARGE NUMBERS

AND LIMIT DISTRIBUTIONS

FOR MIXINGALES

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ABSTRACT

It is shown that laws of large numbers and limit distributions for L^1- and L^2-mixingales can be established using an approach that incorporates previous results. Using the approach of McLeish (1975a) in obtaining strong laws of large numbers, we extend the result of Andrews (1988) on weak laws of large numbers. L^1-weak laws of large numbers are established under weaker conditions than that used in Andrews (1988). In particular, the integrability condition employed by Andrews is dropped. Our conditions for L^1-convergence can be weakened to obtain an L^2-convergence result if the second moment finite. Limit distributions for mixingales are established using the approach of McLeish (1974), which is different from that used in Wooldridge (1986), Gallant (1987) and Gallant and White (1988), and using a different condition from that used in McLeish (1975b, 1977).