

Abstract:

We shall review and compare different methodologies for studying the asymptotic behavior of partial sums of nonlinear functionals of the following type $h(X_i)$ in the long-range dependence setting. Here (X_i) is either a stationary mean-zero Gaussian process or a linear process. The methodologies, we consider, are based on different decompositions of the function h and include that of Surgailis and of Ho and Hsing. The so-called "rank" of these decompositions plays an essential role. We show that all these ranks coincide when the function h is a polynomial. This is joint work with Celine Levy-Leduc and Eric Moulines.