MAXIMAL INEQUALITIES FOR U-PROCESSES OF STRONGLY MIXING RANDOM VARIABLES

Alessio Sancetta

Abstract: Maximal inequalities for U-processes are required in order to achieve a reduction to the first nonvanishing term in their Hoeffding’s decomposition, which is the relevant quantity for statistical inference. This paper proves new maximal inequalities under strong mixing for U-processes in some function spaces. As an application we derive a uniform central limit theorem.

2000 AMS Mathematics Subject Classification: Primary: 62E20; Secondary: 60F17.

Keywords and phrases: Besov space, Hoeffding decomposition, stochastic equicontinuity, strong mixing, U-process.