

**Emmanuel Rio**

Versailles, France

## **A Bernstein inequality and moderate deviations for weakly dependent sequences**

(joint work with Magda Peligrad and Florence Merlevède)

In this talk we present a tail inequality for the maximum of partial sums of a weakly dependent sequence of random variables that is not necessarily bounded. The class considered includes geometrically and subgeometrically strongly mixing sequences. The result is then used to derive asymptotic moderate deviation results. Applications include classes of Markov chains, functions of linear processes with absolutely regular innovations and ARCH models.