Titre: Gaussian concentration bounds for stochastic processes and random fields

Résumé:
The study of concentration inequalities focuses on upper bounds for the probability that certain statistics of (fixed-size) random samples deviate significantly from their mean (or median). For i.i.d. samples, what we refer to as a "Gaussian concentration bound" is a specific case of a concentration inequality, commonly known in the literature as McDiarmid's inequality. More broadly, such bounds are expected to hold for well-behaved statistics (e.g., Lipschitz continuous functions) and for samples of weakly dependent random variables. In this talk I will present a method based on the concept of finitary coding to obtain new results for some classes of stochastic processes and random fields, and in particular for the Ising model above the critical temperature in any dimension.
This presentation is based on joint work with Jean-René Chazottes (CNRS & École Polytechnique, Palaiseau) and Daniel Y. Takahashi (Instituto do Cérebro, UFRN, Brazil).