

# Séminaire de Probabilités et Statistiques

Mardi 15 Septembre à 14h  
Salle de Conférences

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*Cross-correlations and joint Gaussianity in  
multivariate level crossing models*

A variety of phenomena in physical and biological sciences can be mathematically understood by considering the statistical properties of level crossings of random Gaussian processes. Notably, a growing number of these phenomena demand a consideration of correlated level crossings emerging from multiple correlated processes. While many theoretical results have been obtained in the last decades for individual Gaussian level crossing processes, few results are available for multivariate, jointly correlated threshold crossings. Here, we address bivariate upward crossing processes and derive the corresponding bivariate Central Limit theorem as well as provide closed form expressions for their joint level crossing correlations.