



MEET OUR RESEARCH FACULTY

# Dr. Omar El Dakkak

Assistant Professor

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## Research Interests

Probability on Discrete Structures. Graph colouring.

Hoeffding decompositions

Exchangeability

Vapnik-Chervonenkis Combinatorics and Empirical Processes Theory

Nonparametric Bootstrap

## Research Collaborations

With Giovanni Peccati and Ivan Nourdin (University of Luxembourg): Central Limit Theorems for the number of monochromatic structures in a sequence of randomly coloured sequence of simple graphs.

With Giovanni Peccati (University of Luxembourg) and Igor Prünster (Bocconi University, Milan): Hoeffding decompositions for sequences of exchangeable random variables directed by families of additive random probability measures.

With Federico Camia and Alberto Gandolfi (NYU – Abu Dhabi): On conformal maps on discrete lattices.

With Salim Bouzebda (Université de Technologie de Compiègne). Nonparametric Bootstrap for sequential empirical measure processes and applications.

## Publications

### Books

C.Döbler, O. El-Dakkak G. Peccati (2018). Hoeffding Decompositions. Theory and Applications. Manuscript.

### Journal Articles

O. El-Dakkak, S. Feng, M. Wahbah, T. El Fouly, B. Zahawi (2018). Combinatorial methods for bandwidth selection in wind speed kernel density estimation. Submitted

O. El-Dakkak, I. Nourdin, G. Peccati (2018). Central Limit Theorems for the number of monochromatic structures in a sequence of random graphs. Submitted

S. Bouzebda and O. El-Dakkak (2017). Strong approximation for general bootstrap of empirical processes with applications to selected topics in nonparametric statistics. In revision for Mathematical Methods in Statistics.

O. El-Dakkak, G. Peccati and I. Prünster (2014). Exchangeable Hoeffding decompositions over finite sets: a combinatorial characterization and counterexamples. Journal of Multivariate Analysis. Vol. 131, 51-64.

O. El-Dakkak (2012). Limit behaviour of sequential empirical measure processes. Stochastic Analysis and Applications. Vol. 30, n. 4, 725-752.

O. El-Dakkak and G. Peccati (2008). Hoeffding decompositions and urn sequences. *Annals of Probability*. Vol. 36, n. 6, 2280-2310.

## **Affiliations**

Université Paris Nanterre

Sorbonne Université Abu Dhabi