

The 18th Lluís Santaló Research Summer School will take place from Monday 17 to Friday 21 in July 2017. Its central topics will be Algebraic and Combinatorial Methods in Stochastic Calculus. The school will bring together experts in algebraic combinatorics, stochastic differential systems, rough paths theory, the theory of regularity structures, and free probability theory, to present cutting edge introductory lectures on the fruitful interplay of research in these frontier areas of modern mathematics. The unifying link between these lectures are computational, combinatorial and algebraic structures common to these disciplines. The one-week school will consist of four lecture series, one course of 4+4 hours and three courses of 5 hours each. The school will convey the basic ideas, motivations and methods, and thereby prepare a new generation of young students to make their first steps into research at the interfaces between the aforementioned areas.

In recent years, progress has been made in the understanding of algebraic and combinatorial structures underlying several exciting advancements in modern mathematics research. This includes in particular stochastic calculus considered from the point of view of rough paths theory and free probability theory. In this respect, Hopf and Lie algebraic structures have reshaped the field of algebraic combinatorics, and turn out to be crucial in the context of applications in the aforementioned areas.

www.uimp.es

INFORMACIÓN GENERAL

→ **Hasta el 16 de junio de 2017**

Santander

Campus de Las Llamas
Avda. de los Castros, 42
39005 Santander
Tel. 942 29 87 00 / 942 29 87 10
Fax 942 29 87 27
informacion@sa.uimp.es

Madrid

C/ Isaac Peral, 23
28040 Madrid
Tel. 91 592 06 31 / 91 592 06 33
Fax 91 592 06 40 / 91 543 08 97
alumnos@uimp.es

Horario

de 9:00 a 14:00 h
de 16:00 a 18:00 h (excepto viernes)

PLAZOS

→ **Plazo de solicitud de becas**

Hasta el día 17 de mayo, para los cursos que comiencen antes del 7 de julio de 2017

Hasta el día 12 de junio, para los cursos que comiencen a partir del día 10 de julio de 2017

© Eduardo Arroyo,
A+V Agencia de Creadores Visuales, 2017



→ **A partir del 19 de junio de 2017**

Santander

Palacio de la Magdalena
39005 Santander
Tel. 942 29 88 00 / 942 29 88 10
Fax 942 29 88 20

Horario

de 9:00 a 14:00 h
de 15:30 a 18:00 h (excepto viernes)

→ **Apertura de matrícula**

Desde el 24 de abril de 2017
(Plazas limitadas)

* Curso acreditado por el Ministerio de Educación, Cultura y Deporte para profesores de enseñanzas no universitarias

UIMP

Universidad Internacional
Menéndez Pelayo

Santander 2017



XVIII SCHOOL OF MATHEMATICS
«LUIS SANTALÓ»

*Algebraic and Combinatorial
Methods in Stochastic Calculus

Kurusch Ebrahimi-Fard

NIPO: 041-17-002-6

Santander
Del 17 al 21 de julio de 2017

www.uimp.es

→ Código 63KH | Tarifa: C | ECTS: 1

Organizado en colaboración con

 @UIMP
 fb.com/uimp20



XVIII SCHOOL OF MATHEMATICS «LUIS SANTALÓ»**Algebraic and Combinatorial Methods in Stochastic Calculus****Dirección****Kurusch Ebrahimi-Fard**

Norwegian University of Science and Technology

Del 17 al 21 de julio de 2017**Lunes 17**

09:30 h | Opening

10:00 h | Algebraic and combinatorial aspects in stochastic calculus I

Frédéric Patras

Université de Nice

11:00 h | Combinatorial Aspects of Free Probability and Free Stochastic Calculus I

Roland Speicher

Saarland University

12:30 h | Rough paths, regularity structures and renormalisation I

Lorenzo Zambotti

Université Pierre et Marie Curie

15:30 h | Fluctuations of chaotic random variables: theoretical foundations and geometric applications I

Giovanni Peccati

Luxembourg University, Mathematics Research Unit

16:30 h | Fluctuations of chaotic random variables: theoretical foundations and geometric applications II

Giovanni Peccati**Martes 18**

09:30 h | Algebraic and combinatorial aspects in stochastic calculus II

Kurusch Ebrahimi-Fard

10:30 h | Rough paths, regularity structures and renormalisation II

Lorenzo Zambotti

12:00 h | Combinatorial Aspects of Free Probability and Free Stochastic Calculus II

Roland Speicher

15:00 h | Fluctuations of chaotic random variables: theoretical foundations and geometric applications III

Giovanni Peccati

16:00 h | Fluctuations of chaotic random variables: theoretical foundations and geometric applications IV

Giovanni Peccati**Miércoles 19**

09:30 h | Fluctuations of chaotic random variables: theoretical foundations and geometric applications V

Giovanni Peccati

10:30 h | Algebraic and combinatorial aspects in stochastic calculus III

Kurusch Ebrahimi-Fard

12:00 h | Algebraic and combinatorial aspects in stochastic calculus IV

Frédéric Patras**Jueves 20**

09:30 h | Combinatorial Aspects of Free Probability and Free Stochastic Calculus III

Roland Speicher

10:30 h | Combinatorial Aspects of Free Probability and Free Stochastic Calculus IV

Roland Speicher

12:00 h | Algebraic and combinatorial aspects in stochastic calculus V

Kurusch Ebrahimi-Fard

15:00 h | Rough paths, regularity structures and renormalisation III

Lorenzo Zambotti

16:00 h | Rough paths, regularity structures and renormalisation IV

Lorenzo Zambotti**Viernes 21**

09:30 h | Rough paths, regularity structures and renormalisation V

Lorenzo Zambotti

10:30 h | Combinatorial Aspects of Free Probability and Free Stochastic Calculus V

Roland Speicher

12:00 h | Algebraic and combinatorial aspects in stochastic calculus VI

Frédéric Patras

13:00 h | Closing