The school aims to provide an introduction to a very dynamic area of research that lies at the intersection of number theory, p-adic analysis, algebraic geometry and singularity theory. In this area, the local zeta functions (p-adic, archimedean, motivic, etc.) and certain counterparts known as Poincaré series (usual and motivic) associated with filtrations play a central role. The local zeta functions were introduced in the 50s by I. M. Gel'fand and G. E. Shilov. Later, in the 70s, J.-I. Igusa developed a uniform theory for local zeta functions and oscillatory integrals, with a polynomial phase, on fields of characteristic zero. In the p-adic case the local zeta functions are related to the number of solutions of polynomial congruences and to certain exponential sums. There are many (very difficult) conjectures that connect the poles of the local zeta functions with the topology of complex singularities. Recently J. Denef and F. Loeser introduced zeta motivic functions, which constitute a vast extension of the p-adic Igusa zeta functions. Another important object is the Poincaré motivic series introduced by Campillo, Delgado and Gusein-Zade, also involving the topology of complex singularities. This summer school proposes four courses which give an advanced introduction to these topics, proposing exercise sessions (coordinated) as well as fourtalks that present current related research problems. The school is aimed at doctoral and postdoctoral students working on topics broadly connected to the topics in the school.

Civil dislocation and mathematical roots

Open conferences on the work and figure of Lluís A. Santaló Sors

Tuesday 25th of June

19.00h Magdalena Palace Exile of Spanish science and its consequences. The mathematical influence of Lluís A. Santaló Sors.

Antonio Campillo

Wednesday 26th of June

19.00h Magdalena Palace

Professors of Mathematics in the republican exile. The case of Lluís A. Santaló SorsLuis Español González

Thursday 27th of June

19.00h Magdalena Palace
Lluís A. Santaló Sors: His research dimensionSebastià Xambó-Descamps

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GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

INFORMACIÓN GENERAL

Hasta el 14 de junio de 2019

Santander
Campus de Las Llamas
Avda. de los Castros, 42
39005 Santander
Tel. 942 29 87 00 / 942 29 87 10

Madrid
C/ Isaac Peral, 23
28040 Madrid
Tel. 91 592 06 31 / 91 592 06 33

A partir del 17 de junio de 2019

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

alumnos@uimp.es

PLAZOS

Solicitud de becas

Hasta el día 27 de mayo,
para los cursos que comiencen
antes del 5 de julio de 2019

Hasta el día 14 de junio,
para los cursos que comiencen a
partir del 8 de julio de 2019

Apertura de matrícula

Desde el 6 de mayo de 2019
(plazas limitadas)

Horario general

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

Código 64AO / Tarifa: C / ECTS: 1

Organizado en colaboración con:

Real Sociedad
Matemática Española

700-19-002-3

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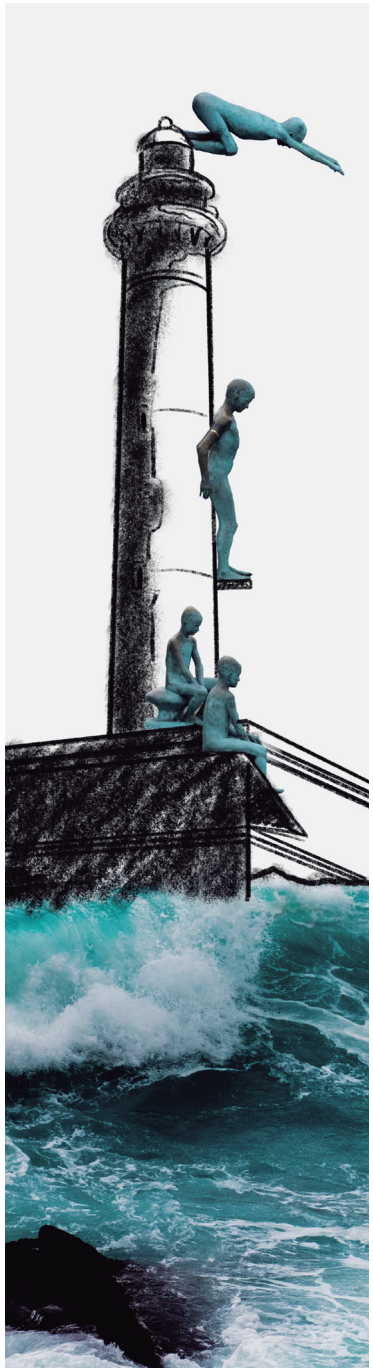
Menéndez Pelayo

SANTANDER 2019



XX SCHOOL
OF MATHEMATICS
«LLUIS SANTALÓ»

Research Summer School 2019: p-adic Analysis, Arithmetic and Singularities

Alejandro Melle Hernández

Del 24 al 28 de junio

www.uimp.es

SANTANDER, 2019 Programa académico

XX SCHOOL OF MATHEMATICS «LLUIS SANTALÓ»

Research Summer School 2019: p-adic Analysis, Arithmetic and Singularities

Dirección
Alejandro Melle Hernández
Catedrático de la Universidad Complutense de Madrid

Secretaría
Carlos Galindo Pastor
Profesor Titular de la Universitat Jaume I de Castellón

Del 24 al 28 de junio

Lunes 24

10:00 h | Opening

10:15 h | Introduction to motivic Poincaré series (I)
Sabir Gusein-Zade
Lomonosov Moscow State University

11:30 h | Coordination-Exercise Session
Julio José Moyano Fernández
Universitat Jaume I de Castelló

12:00 h | Introduction to the singularities of plane curves (I)
Francisco José Monserrat Delpalillo
Universidad Politécnica de Valencia

15:30 h | Introduction to p-adic analysis (I)
Wilson Álvaro Zúñiga Galindo
Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional

16:30 h | Introduction to motivic Poincaré series (II)
Sabir Gusein-Zade

Martes 25

09:30 h | Introduction to motivic Poincaré series (III)
Sabir Gusein-Zade

11:00 h | Coordination-Exercise Session
Julio José Moyano Fernández

11:30 h | Introduction to p-adic analysis (II)
Wilson Álvaro Zúñiga Galindo

12:30 h | Introduction to motivic Poincaré series (IV)
Sabir Gusein-Zade

15:30 h | Introduction to local zeta functions (I)
Willem Veys
University of Leuven (KU Leuven)

16:30 h | Introduction to the singularities of plane curves (II)
Francisco José Monserrat Delpalillo

Miércoles 26

09:30 h | Introduction to the singularities of plane curves (III)
Francisco José Monserrat Delpalillo

11:00 h | Coordination-Exercise Session
Julio José Moyano Fernández

11:30 h | Introduction to p-adic analysis (III)
Wilson Álvaro Zúñiga Galindo

12:30 h | Introduction to the singularities of plane curves (IV)
Francisco José Monserrat Delpalillo

15:30 h | Poincaré series and Topology
Félix Delgado de la Mata

16:15 h | On Archimedean zeta functions and Newton polyhedra
Edwin León Cardenal

Jueves 27

09:30 h | Introduction to p-adic analysis (IV)
Wilson Álvaro Zúñiga Galindo

11:00 h | Coordination-Exercise Session
Julio José Moyano Fernández

11:30 h | Introduction to local zeta functions (II)
Willem Veys

15:30 h | Introduction to local zeta functions (III)
Willem Veys

16:30 h | A tour on p-adic string theory
Juan Manuel Burgos

17:15 h | p-adic electrostatics
Chris Sinclair

Viernes 28

09:30 h | Introduction to p-adic analysis (V)
Wilson Álvaro Zúñiga Galindo

10:30 h | Coordination-Exercise Session
Julio José Moyano Fernández

11:30 h | Introduction to local zeta functions (IV)
Willem Veys

13:00 h | Closing