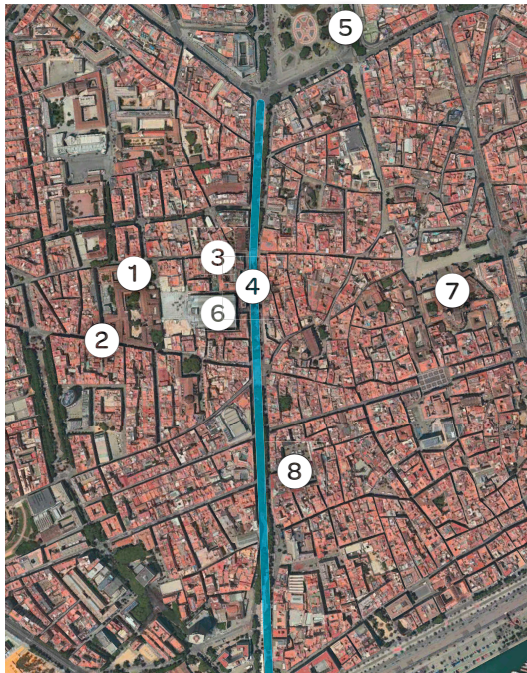✈ Barcelona airport can be reached by bus lines *A1* and *A2* as well as the metro line *L9 Sud* (orange line) and Roadalies train *R2 Nord*. Please note that the L9 Sud will not be available during the weekend before the meeting. Note that the two terminals are not directly next to each other, so either make sure that you arrive at the right terminal or leave enough time to take the free airport shuttle bus between the terminals.

Most travel within the city center and even to some tourist attractions further out can be done on foot, though metro lines and busses are of course available. Note that for many tourist attractions including Park Güell, La Sagrada Familia and the Picasso Museum booking tickets in advance for specific time slots is advisable.

All coffee breaks are included. On Monday, self-service lunch will be at *FrescCo* (carrer del Carme 16), very close to the venue. You'll need your badge for this. On Monday evening, a finger buffet dinner will be offered at 19.00 at the *Institut d'Estudis Catalans* (venue of the event).

Berlin Mathematical School

BGSMath
BARCELONA GRADUATE SCHOOL OF MATHEMATICS

BMS -BGSMath
Junior Meeting

Barcelona, 9 - 10 October 2017

1. **Institut d'Estudis Catalans**
   talks in the Sala Prat de la Riba
2. **Residència d'Investigadors**
3. **Restaurant FrescCo**
4. **Liceu Subway Station**
   subway line L3 (green line)
5. **Plaça de Catalunya**
   airport busses A1 and A2
6. **La Boqueria**
   famous Barcelona public market
7. **Barcelona Cathedral**
8. **Plaça Reial**

La Rambla is highlighted in blue

keynote speakers

Marta Casanellas
UPC Barcelona

Eulàlia Nualart
UPF Barcelona

Rainer Sinn
FU Berlin

organizing committee

Marc Noy
Director of the BGSMath

John M. Sullivan
Co-Chair of the BMS

Bahareh Banyassady   Carles Barril   Katharina Klost
Jean-Philippe Labbé   Federico Cantero Morán
Christoph Spiegel   Martin Wahl

DFG

EXCELENCIA MARÍA DE MAEZTU

Monday

8.30	registration
9.00	opening by Marc Noy and John M. Sullivan
9.10	**Rainer Sinn** *Extension Complexity and the Matching Polytope*
10.00	coffee break
10.30	**Anurag Bishnoi** *Extremal Problems in Finite Geometry*
	Gonzalo Fiz Pontiveros *Ramsey Theory and Random Processes*
	Tamás Mészáros *Algebraic Methods in Combinatorics*
	Maximilian Wötzel *Property Testing in Bounded Degree Graphs*
10.20	short break
10.30	**Hendrik Molter** *A parameterized View on Multi-Layer Cluster Editing*
	Michal Garlík *Proof Complexity and the Parity Connective*
	Nadja Scharf *Geometric Packing*
12.10	short break
12.25	**Rosina Malagrida** *Introduction to Responsible Research and Innovation*

13.10	lunch break
15.00	**Marta Casanellas** *Is Algebra useful for Phylogenetics?*
15.50	coffee break
16.30	**Marta Panizzut** *Tropical Varieties and K3 Polytopes*
	Francesca Gatti *The Birch and Swinnerton-Dyer Conjecture*
	Kathlén Kohn *Coisotropic Hypersurfaces in Algebraic Vision*
	Roser Homs *TBA*
17.20	short break
17.30	**Daniel Lütgehetmann** *Configuration Spaces in Algebraic Topology*
	Carlos Sáez *Actions of Finite Groups on Manifolds, Smooth and Symplectic*
	Barbara Jung *Arithmetic Volumes of Moduli Spaces of Abelian Varieties*
	Teresa García *Compactifications of Group Actions on CAT(-1) Space*
19.00	dinner at Institut d'Estudis Catalans

Tuesday

9.30	**Eulàlia Nualart** *Intermittency for Stochastic Heat Equations on Bounded Domains*
10.20	coffee break
11.00	**Todor Bilarev** *Optimization Problems with a Large Trader in Mathematical Finance*
	Giulia Binotto *Delay Stochastic Differential Equations driven by Fractional Brownian Motion*
	Tal Orenshtein *Critical Behavior of Wetting Models in (1+1) Dimensions*
	Amanda Fernández *Beyond the Binomial Thinning Operator*
11.50	short break
12.00	**Juan Carlos Cantero** *Transport Equations via Smooth Kernels*
	Markus Mittnenzweig *Variational Methods for Quantum Master Equations*
	Matteo Cozzi *Fractional Integro-Differential Equations and Nonlocal Minimal Surfaces*
	Carlos Amendola *Are Gaussian Mixtures Identifiable?*
12.50	closing

Extension Complexity and the Matching Polytope

Surprisingly, many of the usual statistical evolutionary models can be viewed as algebraic varieties. In this talk we will show how different mathematical areas such as linear and commutative algebra, algebraic geometry, group representation theory, or numerical methods, show up when one studies these varieties. Moreover, we prove that an in-depth geometric study leads to improvements on phylogenetic reconstruction methods. We illustrate these improvements by showing results on simulated data and by comparing them to widely used methods in phylogenetics. In order to follow this talk it is not required a previous knowledge on algebraic varieties or phylogenetics.   **Rainer Sinn**

Is algebra useful for phylogenetics?

Surprisingly, many of the usual statistical evolutionary models can be viewed as algebraic varieties. In this talk we will show how different mathematical areas such as linear and commutative algebra, algebraic geometry, group representation theory, or numerical methods, show up when one studies these varieties. Moreover, we prove that an in-depth geometric study leads to improvements on phylogenetic reconstruction methods. We illustrate these improvements by showing results on simulated data and by comparing them to widely used methods in phylogenetics. In order to follow this talk it is not required a previous knowledge on algebraic varieties or phylogenetics.   **Marta Casanellas**

Intermittency for stochastic heat equations on bounded domains

I will present an overview talk about recent results on moments, intermittency and chaotic behavior of some stochastic heat equations on bounded domains. I will also discuss some open problems.   **Eulàlia Nualart**