

# Focused workshop on F1-geometry

University of Granada, November 23rd to 25th

The purpose of this workshop is to bring together a number of young researchers and introduce them to a research topic through several introductory talks followed by specific lectures concerning the topic under study: the mysterious field with one element and the different notions of algebraic geometry developed over it.

## Speakers

- \* Peter Arndt (Universität Göttingen, Germany)
- \* Javier López Peña (Queen Mary University of London, UK)
- \* Oliver Lorscheid (Universität Wuppertal, Germany)
- \* Snigdhayan Mahanta (Johns Hopkins University, USA)
- \* Florian Marty (MPIM Bonn, Germany)
- \* Jorge Plazas Vargas (Universiteit Utrecht, The Netherlands)

## Organizers

- \* José Gómez Torrecillas - gomezj@ugr.es
- \* Pascual Jara Martínez - pjara@ugr.es
- \* Javier López Peña - j.lopez@qmul.ac.uk

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## Monday 23

- **9:00-10:00** Welcome and registration
- **10:00-10:30** Coffee break
- **10:30-12:00** Categories and homotopy theory (by Peter Arndt and Snigdhayan Mahanta)
- **12:00-13:30** Algebraic Geometry (by Javier López Peña and Florian Marty)
- **13:30-15:30** Lunch (Comedores universitarios)
- **15:30-17:00** Number theory and motives (by Oliver Lorscheid and Jorge Plazas Vargas)

## Tuesday 24

- **9:00-10:00** What is  $F_1$ ? (by Peter Arndt)
- **10:00-11:00** Zeta functions and motives over  $F_1$  (by Jorge Plazas Vargas)
- **11:00-11:30** Coffee break
- **11:30-12:30** Geometry of monoids (by Javier López Peña)
- **12:30-13:30** Algebraic groups over  $F_1$  (by Oliver Lorscheid)
- **13:30-15:30** Lunch (Comedores universitarios)

## Wednesday 25

- **9:00-10:00** Geometry over Generalized Rings (by Peter Arndt)
- **10:00-11:00** A notion of smoothness for affine  $F_1$ -schemes (by Florian Marty)
- **11:00-11:30** Coffee Break
- **11:30-12:30** On some topological constructions in the context of  $F_1$ -geometry (by Snigdhayan Mahanta)
- **12:30-14:00** Open problems and further research directions
- **14:00-15:30** Lunch (Comedores universitarios)

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