



# PROGRAM EGC 2019

SUNDAY, JUNE 30

19:30 RECEPTION

MONDAY, JULY 1

8:30 REGISTRATION

9:15 OPENING CEREMONY

Invited Talk: Marc van Kreveld

10:00 **Geometric Definitions for Geographic Problems: groups of moving entities and other phenomena**  
Chair: Rodrigo Silveira

11:00 COFFEE BREAK

SESSION 1 Chair: Jorge Urrutia

11:30 **Maximum matching in disk graphs of bounded depth** Sergio Cabello and Wolfgang Mulzer

11:50 **Generalized kernels of polygons under rotation: area and perimeter** Alejandra Martínez-Moraian, David Orden, Leonidas Palios, Carlos Seara and Paweł Żyliński

12:10 **Affine invariant triangulations** Prosenjit Bose, Pilar Cano and Rodrigo Silveira

12:30 SHORT BREAK

SESSION 2 Chair: Alberto Márquez

12:40 **Parallel Simulated Annealing for coverage area maximization** Narcís Coll, Marta Fort and Moisès Saus

13:00 **Collision avoidance for aerial vehicles using turn-angles** Luis Evaristo Caraballo, José-Miguel Díaz-Báñez, Ruy Fabila-Monroy, Alberto Fernández and Fabio Rodríguez

13:20 LUNCH

SESSION 3 Chair: Sergio Cabello

15:00 **The convex dimension of k-uniform hypergraphs** Leonardo Martínez-Sandoval and Arnau Padrol

15:20 **Geometric optimization problems for divisions of convex bodies** Antonio Cañete, Isabel Fernández and Alberto Márquez

15:40 **A complete list of all convex shapes made by gluing regular pentagons** Elena Arseneva, Stefan Langerman and Boris Zolotov

16:00 COFFEE BREAK

SESSION 4 Chair: Javier Tejel

16:20 **Extending to 1-Plane Drawings** Fabian Klute, Irene Parada and Thekla Hamm

16:40 **Bounding the number of crossings for a particular class of drawings of  $K_{n,n}$**  Carolina Medina, Irene Parada, Gelasio Salazar and Birgit Vogtenhuber

17:00 BUSSINESS MEETING

19:30 GIRONA OLD QUARTER TOUR



Universitat de Girona  
**Departament d'Informàtica,  
Matemàtica Aplicada i Estadística**



## TUESDAY, JULY 2

Invited Talk: David Rappaport

9:30

**Old Problems New Results**

Chair: Carlos Seara

10:30

COFFEE BREAK

SESSION 5 Chair: Bettina Speckmann

11:00

**Hamiltonian meander paths and cycles on bichromatic point sets**

Oswin Aichholzer, Carlos Alegría, Irene Parada, Alexander Pilz, Javier Tejel, Csaba D. Tóth, Jorge Urrutia and Birgit Vogtenhuber

11:20

**Matching random colored points with rectangles**

Josue Corujo, David Flores-Peñaloza, Clemens Huemer, Pablo Pérez-Lantero and Carlos Seara

11:40

**Perfect rainbow polygons for colored point sets in the plane**

David Flores-Peñaloza, Mikio Kano, Leonardo Martínez-Sandoval, David Orden, Javier Tejel, Csaba D. Tóth, Jorge Urrutia and Birgit Vogtenhuber

12:00

SHORT BREAK

SESSION 6 Chair: Birgit Vogtenhuber

12:10

**Detecting inclusions for  $\varrho$ -convex hulls of bichromatic point sets**

Carlos Alegría, David Orden, Carlos Seara and Jorge Urrutia

12:30

**On circles enclosing many points**

Mercè Claverol, Clemens Huemer and Alejandra Martínez-Moraian

12:50

**On the Triangle Vector**

Oswin Aichholzer, Ruy Fabila-Monroy and Julia Obmann

13:10

LUNCH

SESSION 7 Chair: Rodrigo Silveira

14:30

**A random polytope approach for classifying hollow polytopes**

Oscar Iglesias-Valiño

14:50

**Interpolating shapes with singularities using toric orbifolds**

Ander Elkoroaristizabal Peleteiro and Julian Pfeifle

15:10

**Erhart positivity of orbit polytopes**

Filip Cano Córdoba and Julian Pfeifle

15:30

COFFEE BREAK

SESSION 8 Chair: Narcís Coll

15:50

**Total domination of near-triangulations**

Javier Tejel, Mercè Claverol, Alfredo García, Gregorio Hernández, Carmen Hernando, Montserrat Maureso and Mercè Mora

16:10

**Can one shape the color of a graph?**

María Á. Garrido-Vizueté, Alberto Márquez and Rafael Robles

18:30

SOCIAL DINNER

## WEDNESDAY, JULY 3

Invited Talk: Carme Torras

10:00

**Research Challenges in Cloth Manipulation by Robots**

Chair: Vera Sacristán

11:00

COFFEE BREAK

SESSION 9 Chair: Gregorio Hernández

11:30

**Reconfiguring edge-connected pivoting modular robots**

Hugo A. Akitaya, Esther M. Arkin, Mirela Damian, Erik D. Demaine, Vida Dujmović, Robin Flatland, Belén Palop, Irene Parada, André van Renssen and Vera Sacristán

11:50

**Optimal coordinated motions for two squares**

Dan Halperin, Víctor Ruiz, Vera Sacristán and Rodrigo Silveira

12:10

**Route graph construction from GPS trajectory data**

Anton Bardera, Marta Fort and Yuejun Guo

12:30

SHORT BREAK

SESSION 10 Chair: Marta Fort

12:40

**Real-time accurate and robust Simultaneous Localization and Mapping**

Francisco Javier Delgado del Hoyo, Javier Finat Codes and Belén Palop

13:00

**Using spectrum graph coloring in air traffic management**

Alejandra Martínez-Moraian, David Orden, Jose Manuel Gimenez-Guzman and Iván Marsa Maestre

13:20

LUNCH