Quantum Toric Geometry and Chimeras

An IMSA program
21-25 October 2019
Coral Gables, FL

PURPOSE

Originating in classical themes of complex non-Kahler geometry, generalizations of Calabi-Eckmann fibrations were introduced and studied as LVMB manifolds, a line of thought that under the influence of mirror symmetry evolved into the field of Quantum Toric Geometry (which is a non-commutative quantization of classical toric geometry).

Quantum toric geometry, while a beautiful self-contained field of non-commutative geometry, is missing some features required for a full-fledged unification with mirror symmetry. It turns out that there is a further generalization of Quantum Toric Geometry discovered in 1998 that uses beautiful ideas from mathematical logic: chimeric algebraic geometry.

Chimeric toric geometry generalizes quantum toric geometry and contains all the necessary cases produced by the sandpile models incorporating scale-invariant self-organized criticality. It uses tools from logic.

The purpose of this workshop and conference is to explore these nascent fields and to investigate their consequences for mirror symmetry.

PROGRAM

	Mon 21 Oct	Tue	Wed	Thu	Fri
10 am -11 am	Welcome	Becerra	Kurnosov	Otero	Angel
11:30 am - 12:30 am	Gendron	Meersseman	Meersseman	Meersseman	Lupercio
2:30 pm - 3:30 pm	Lupercio	López de Medrano	Ruiz Guido	López de Medrano	Open problems round table
4pm - 5pm	Katzarkov	Bressler	Lupercio	Bressler	

MINI-COURSES

1. ***Quantum Toric Geometry*** **by Laurent Meersseman (Keynote Speaker)**
2. *Intersections of Quadrics* by Santiago López de Medrano
3. *Combinatorial Toric Geometry and Toric Sheaves* by Paul Bressler
4. *Chimeric Geometry* by Ernesto Lupercio

SPEAKERS

Andres Ángel (U Norte, Barranquilla)

Enrique Becerra (IPN, México)

Paul Bressler (U Andes, Bogotá)

Tim Gedron (UNAM, Cuernavaca)

Nikon Kurnosov (UGA, USA)

Santiago López de Medrano (UNAM, México)

Ernesto Lupercio (Cinvestav, México)

Ludmil Katzarkov (U Miami)

Laurent Meersseman (U Angers)

Ignacio Otero (Cinvestav, México)

Carlos Ruiz (CIMAT, Guanajuato)

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