

YOUNES EL MAAMOUN BENYAHIA

Scuola Internazionale Superiore di Studi Avanzati, International Centre for Theoretical Physics

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ACADEMIC INTERESTS

My interests lie in the field of low dimensional topology, in particular, exotic surfaces in 4-manifolds, that is, smoothly embedded surfaces in smooth 4-manifolds that are topologically ambient isotopic but not smoothly so.

EDUCATION

Scuola Internazionale Superiore di Studi Avanzati, International Centre for Theoretical Physics.

- Ph.D., Degree (expected graduation: 2025).
- Advisor: Rafael Torres.

International Centre for Theoretical Physics.

- ICTP Postgraduate Diploma Program Degree in Mathematics, 2021.
- Thesis: Vector Bundles and the Chern-Weyl Theory. Advisor: Pavel Putrov.

University of Science and Technology Houari Boumediene.

- Undergraduate Degree in Pure Mathematics, 2020.

PREPRINTS

2. **Exotically knotted 2-spheres and the fundamental groups of their complements.** Submitted.
1. **A recipe for exotic 2-links in closed 4-manifolds whose components are topological unknots** (joint with Valentina Bais, Oliviero Malech and Rafael Torres). Submitted.

TALKS

9. *Exotic 2-knots and their 2-knot groups.* Baby Geometry Seminar, Pisa, November 2024.
8. *Exotic 2-knots and some of their properties.* GT GAPS, October 2024.
7. *Short Talk: Exotic 2-links and the fundamental groups of their complement.* Combinatorial and Gauge theoretical methods in low dimensional topology and geometry, June 2024.
6. *Short Talk: Exotic 2-links and the fundamental groups of their complement.* Georgia Topology Conference, May 2024.
5. *Tayloring a 4-manifold for the everyday group.* SISSA Junior GMP Seminar, February 2024.
4. *Exotic 2-knots and 2-links in 4-manifolds.* Seminars on Knot Theory and Related Topics, September 2023.
3. *Exotic 2-knots and 2-links in 4-manifolds.* GDR Journées Tresses, Marseille, August 2023.

2. *4-manifolds and exotic 2-spheres*. Tassily Sunday Math Seminar, March 2023.

1. *Heegard splittings and Dehn surgery*. SISSA Low Dimensional Topology Seminar, October 2022.

TEACHING EXPERIENCE

International Centre for Theoretical Physics

- Tutor, algebraic topology, expected 2025.

Algerian Math Olympiad

- Instructor and tutor, 2021-2024.
- Observer A at the 2023 International Mathematical Olympiad, Japan.

OUTREACH

- Volunteer at the SISSA Junior Math Days December 2023.
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- Co-organizer of *The Pure Math Open Days*, with Alaa Boukholkhal, April 2023. Event [website](#).

AWARDS AND SCHOLARSHIPS

- Joint International ICTP/SISSA PhD Scholarship, 2021-2025.
- ICTP Postgraduate Diploma Program Scholarship, 2020-2021.
- Honorable mentions at the International Mathematical Olympiad, 2016, 2017.