

Marius Kongsore

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POSITIONS

Kavli Institute for Theoretical Physics, UC Santa Barbara **2026–present**
• Postdoctoral Scholar

EDUCATION

New York University (NYU) **2021–2026**
• Ph.D. in Physics
• Advisor: Ken Van Tilburg
• Thesis: *New Symmetries for New Particle Physics: Topology, Effective Field Theory, and Physical Observables*

University of Michigan, Ann Arbor (UM) **2017–2021**
• B.Sc. in Physics & Mathematics
• Senior Thesis Advisor: Benjamin R. Safdi
• Thesis: *Detecting Decaying Dark Matter with X-Ray Telescope Observations*

PUBLICATIONS

- [7] H. Banks, **M. Kongsore**, and N. Weiner. “Big Axions”. In: *arXiv preprint* (June 2026). arXiv: 2606.05276 [hep-ph].
- [6] I. Garcia Garcia, **M. Kongsore**, and K. Van Tilburg. “Dyon Loops and Abelian Instantons”. In: *JHEP* 05 (2026), p. 244. DOI: 10.1007/JHEP05(2026)244. arXiv: 2506.14867 [hep-th].
- [5] N. Craig and **M. Kongsore**. “High-quality axions from higher-form symmetries in extra dimensions”. In: *Phys. Rev. D* 111.1 (2025), p. 015047. DOI: 10.1103/PhysRevD.111.015047. arXiv: 2408.10295 [hep-ph].
- [4] D. I. Dunskey and **M. Kongsore**. “Primordial black holes from axion domain wall collapse”. In: *JHEP* 06 (2024), p. 198. DOI: 10.1007/JHEP06(2024)198. arXiv: 2402.03426 [hep-ph].
- [3] ATLAS Collaboration incl. **M. Kongsore**. “The ATLAS experiment at the CERN Large Hadron Collider: a description of the detector configuration for Run 3”. In: *JINST* 19.05 (2024), P05063. DOI: 10.1088/1748-0221/19/05/P05063. arXiv: 2305.16623 [physics.ins-det].
- [2] I.-K. Chen, **M. Kongsore**, and K. Van Tilburg. “Detecting dark compact objects in Gaia DR4: A data analysis pipeline for transient astrometric lensing searches”. In: *JCAP* 07 (2023), p. 037. DOI: 10.1088/1475-7516/2023/07/037. arXiv: 2301.00822 [astro-ph.GA].
- [1] J. W. Foster, **M. Kongsore**, C. Dessert, Y. Park, N. L. Rodd, K. Cranmer, and B. R. Safdi. “Deep Search for Decaying Dark Matter with XMM-Newton Blank-Sky Observations”. In: *Phys. Rev. Lett.* 127.5 (2021), p. 051101. DOI: 10.1103/PhysRevLett.127.051101. arXiv: 2102.02207 [astro-ph.CO].

Note: Except for [1], author lists follow the particle physics convention of alphabetical order.

FELLOWSHIPS & AWARDS

- **James Arthur Graduate Assistantship** ($\times 3$), NYU 2024–26
- **KITP Graduate Fellowship**, Kavli Institute for Theoretical Physics (KITP) 2024
- **Outstanding Graduate Student Instructor Award**, NYU 2023
- **Carl P. Feinberg Fellowship in Theoretical Physics**, NYU 2023
- **MacCracken Graduate Fellowship**, NYU 2021–22
- **Research Semester at CERN Fellowship**, UM 2020
- **Michigan Summer Research Fellowship**, UM 2019

TALKS & PRESENTATIONS

Invited Talks & Seminars

- **LITP Wine and Cheese Seminar**, Stanford Univ. Jun 2026
Big Axions
- **GRASP Seminar**, Harvard Univ. Apr 2026
Dyon Loops and Abelian Instantons
- **NHETC Seminar**, Rutgers Univ. Apr 2026
Dyon Loops and Abelian Instantons
- **Dehmelt Seminar**, Univ. of Washington Jan 2026
New Symmetries for New Particle Physics
- **LEPP Theory Seminar**, Cornell Univ. Dec 2025
Dyon Loops, Axions, and the Symmetries in Between
- **Leinweber Seminar**, Univ. Chicago Nov 2025
Dyon Loops, Axions, and the Symmetries in Between
- **Particle Theory Seminar**, Perimeter Inst. Oct 2025
Dyon Loops, Axions, and the Symmetries in Between
- **EPT Seminar**, Univ. Maryland May 2025
Dyon Loops and Abelian Instantons
- **CCPP Brown Bag**, NYU Apr 2025
Generalized Symmetries for the Generalist
- **CERN BSM Forum Seminar**, CERN (Remote) Sep 2024
High-Quality Axions from Higher-Form Symmetries
- **Perimeter Institute Particle Theory Talk**, Perimeter Inst. Jul 2024
Extra-Dimensional Axions and the Power of Higher-Form Symmetries
- **Washington Particle Theory Seminar**, Univ. Washington Apr 2024
Primordial Black Holes from Axion Domain Wall Collapse
- **KITP Lunch Talk**, KITP Feb 2024
Primordial Black Holes from Axion Domain Wall Collapse
- **Perimeter Institute Particle Theory Talk**, Perimeter Inst. Jul 2023
Primordial Black Holes from Axion Domain Wall Collapse
- **CCA PACMAN Talk**, Flatiron Inst. Feb 2023
Detecting Dark Compact Objects with Astrometric Lensing

- **Perimeter Institute Particle Theory Talk**, Perimeter Inst. Jul 2022
Detecting Dark Compact Objects with Astrometric Lensing

Conference & Workshop Presentations

- **Symmetries and Topology in Particle Physics**, IHES Mar 2026
Dyon Loops and Non-Abelian Instantons
- **Pheno 2023**, Univ. Pittsburgh May 2023
Detecting Dark Compact Objects with Astrometric Lensing
- **Cambridge High Energy Workshop**, Harvard Jul 2022
Detecting Dark Compact Objects with Astrometric Lensing
- **Summitting the Unknown**, Univ. Washington Jul 2022
Detecting Dark Compact Objects with Astrometric Lensing
- **ATLAS Upgrade Week**, CERN Apr 2020
Status of ATLAS NSW sTGC Integration and Commissioning
- **Michigan Spring Research Symposium**, UM Apr 2018
Laboratory Astrophysics — X-Ray Fluorescence Spectroscopy

TEACHING

- **Quantum Field Theory I**, NYU Fall 2022
Graduate teaching assistant. Delivered full lectures on index notation, group theory, representation theory, complex analysis, and spinor formalism.

OUTREACH & SERVICE

- **Journal Referee** 2025–present
Refereed submissions to Physical Review Letters and Physics Letters B.
- **HEP-PH/TH Journal Club Organizer**, NYU 2023–2026
Weekly discussion of new papers for students/postdocs/faculty. Lead organizer.
- **Cosmic Happy Hour Speaker** Spring 2026
Gave a public talk at Book Club Bar titled “Magnetic Monopoles: What are they, and where are the damn things?”
- **Michigan Research and Discovery Scholars Speaker**, UM Spring 2023, 2026
Program for undergraduates interested in research. Invited alumni panelist and speaker.
- **CU*IP Website Lead**, NYU 2024–25
Conference for Undergraduate Women and Gender Minorities in Physics.
- **Society of Physics Students Board**, UM 2020–21
Student physics society. Secretary on board of organizers.
- **Ypsilanti Math Corps Student Co-Organizer**, UM Summer 2019
Summer math program for disadvantaged middle school students from Detroit.
- **Michigan Research and Discovery Scholars Advisor**, UM 2018–19
Program for undergraduates interested in research. Sophomore advisor.