

Ameen Ismail

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INSPIRE: <http://inspirehep.net/authors/1797161>

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Education

Cornell University, Ithaca, New York.

Ph.D. in Physics (*expected May 2024*).

Advisor: Csaba Csáki.

Sept. 2018–present

Carleton University, Ottawa, Ontario, Canada.

B.Sc. Honours with High Distinction, Biology and Physics,
Minor in Mathematics.

Undergraduate thesis advisor: Jeff Dawson.

June 2018

Papers

Holographic Energy Correlators for Confining Theories

C. Csáki and **A. Ismail**

arXiv: 2403.12123 [hep-ph]

Axion dark matter from inflation-driven quantum phase transition

S. Ferrante, **A. Ismail**, S. J. Lee, and B. Yu

arXiv: 2402.08716 [hep-ph]

Forbidden conformal dark matter at a GeV

S. Ferrante, **A. Ismail**, S. J. Lee, and Y. Lee

JHEP **11** 186 (2023); arXiv: 2308.16219 [hep-ph]

FIMPzilla dark matter and conformal sectors

A. Ismail

Phys. Rev. D **108**, 095049 (2023); arXiv: 2306.06161 [hep-ph]

Relevant dilaton stabilization

C. Csáki, M. Geller, Z. Heller-Algazi, and **A. Ismail**
JHEP **06** 202 (2023); arXiv: 2301.10247 [hep-ph]

The continuum dark matter zoo

C. Csáki, **A. Ismail**, and S. J. Lee
JHEP **02** 053 (2023); arXiv: 2210.16326 [hep-ph]

Higgs squared

C. Csáki, **A. Ismail**, M. Ruhdorfer, and J. Tooby-Smith
JHEP **04** 082 (2023); arXiv: 2210.02456 [hep-ph]

α -anomalous interactions of the holographic dilaton

C. Csáki, J. Hubisz, **A. Ismail**, G. Rigo, and F. Sgarlata
Phys. Rev. D **106**, 055004 (2022); arXiv: 2205.15324 [hep-ph]

The Forward Physics Facility at the High-Luminosity LHC

FPF collaboration paper; contribution to Snowmass 2021
J. Phys. G **50** 3, 030501 (2023); arXiv: 2203.05090 [hep-ex]

CKM substructure from the weak to the Planck scale

Y. Grossman, **A. Ismail**, J. T. Ruderman, and T.-H. Tsai
JHEP **06** 065 (2022); arXiv: 2201.10561 [hep-ph]

The Forward Physics Facility: Sites, experiments, and physics potential

FPF collaboration paper
Phys. Rept. **968**, 1-50 (2022); arXiv: 2109.10905 [hep-ph]

Crunching Dilaton, Hidden Naturalness

C. Csáki, R. T. D'Agnolo, M. Geller, and **A. Ismail**
Phys. Rev. Lett. **126**, 091801 (2021); arXiv: 2007.14396 [hep-ph]

Benchmark for LHC searches for low-mass custodial fiveplet scalars in the Georgi-Machacek model

A. Ismail, B. Keeshan, H. E. Logan, and Y. Wu
Phys. Rev. D **103**, 095010 (2021); arXiv: 2003.05536 [hep-ph]

Updated constraints on the Georgi-Machacek model from LHC Run 2

A. Ismail, H. E. Logan, and Y. Wu
arXiv: 2003.02272 [hep-ph]

Seminars & talks

Confining conformal colliders: towards QCD energy correlators from holography

DPF-Pheno 2024 parallel talk

May 2024

Cornell-Syracuse (CoSy) HEP theory meeting

Apr. 2024

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| Relevant dilaton stabilization | |
| New York U. Informal HEP Seminar | Oct. 2023 |
| UC Berkeley 4D Seminar | Oct. 2023 |
| UC Irvine Joint Particle Seminar | Oct. 2023 |
| UC Riverside HEP Seminar | Oct. 2023 |
| U. of Maryland EPT Seminar | Mar. 2023 |
| Cornell U. LEPP Theory Seminar | Feb. 2023 |
| Z-portal continuum dark matter models | |
| Pheno 2023 parallel talk | May 2023 |
| Cornell HEP experiment/theory workshop | Feb. 2023 |
| Cornell-Syracuse (CoSy) HEP theory meeting | Nov. 2022 |
| Holographic dilaton action: the a -term | |
| Pheno 2022 parallel talk | May 2022 |
| Crunching dilaton, hidden naturalness: a new approach to the hierarchy problem | |
| 2 nd Forward Physics Facility Meeting parallel talk | May 2021 |
| Pheno 2021 parallel talk | May 2021 |
| Carleton U. Particle Seminar | Sept. 2020 |
| Cornell U. LEPP Theory Seminar | Sept. 2020 |
| Updated constraints on the Georgi-Machacek model | |
| Pheno 2020 parallel talk | May 2020 |

Conferences, schools & workshops

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| DPF-Pheno 2024 (Pittsburgh, PA) | May 2024 |
| Cornell-Syracuse (CoSy) HEP theory meeting (Ithaca, NY) | Apr. 2024 |
| Phenomenology 2023 symposium (Pittsburgh, PA) | May 2023 |
| Cornell HEP experiment/theory workshop (Ithaca, NY) | Feb. 2023 |
| Cornell-Syracuse (CoSy) HEP theory meeting (Syracuse, NY) | Nov. 2022 |
| TASI 2022: Ten Years After the Higgs Discovery (Boulder, CO) | June 2022 |
| Phenomenology 2022 symposium (Pittsburgh, PA) | May 2022 |
| 4 th Forward Physics Facility meeting (virtual) | Jan. 2022 |
| 3 rd Forward Physics Facility meeting (virtual) | Oct. 2021 |
| 2 nd Forward Physics Facility meeting (virtual) | May 2021 |
| Phenomenology 2021 symposium (virtual) | May 2021 |
| Phenomenology 2020 symposium (virtual) | May 2020 |
| GGI Lectures on the Theory of Fundamental Interactions (Florence, Italy) | Jan. 2020 |

Awards & honours

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| Stirling A. Colgate Award (Cornell University) | 2022 |
| NSERC Postgraduate Scholarships—Doctoral | 2021 |
| NSERC Alexander Graham Bell Canada Graduate Scholarships (declined) | 2021 |
| Cornell Fellowship (Cornell University; awarded 2018, deferred) | 2020 |
| Presidential Life Science Fellowship (Cornell University) | 2018 |
| NSERC Canada Graduate Scholarships—Master’s (declined) | 2018 |
| NSERC Undergraduate Student Research Award | 2018 |
| C.A.B. Betts Memorial Award in Physics (Carleton University) | 2017 |
| NSERC Undergraduate Student Research Award | 2017 |
| Trevor A. Harwood Memorial Award in Physics (Carleton University) | 2016 |
| NSERC Undergraduate Student Research Award | 2016 |

Teaching

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| Grader, PHYS 7681: Quantum Information Processing | Fall 2022 |
| Grader, PHYS 6554: General Relativity II | Spring 2021 |
| Grader, PHYS 7652: Relativistic Quantum Field Theory II | Spring 2020 |
| Teaching assistant, PHYS 2217: Physics II: Electricity and Magnetism | Spring 2020 |
| Teaching assistant, PHYS 1101: General Physics I | Fall 2019 |

Other activities

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| Referee, <i>Journal of High Energy Physics</i> . | 2023 |
| Referee, <i>European Physical Journal C</i> . | 2021 |
| Author, GMCALC: a calculator for the Georgi-Machacek model, v 1.5.0. | 2021 |