

Ameen Ismail

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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

Forbidden conformal dark matter at a GeV

S. Ferrante, **A. Ismail**, S. J. Lee, and Y. Lee
submitted to JHEP; arXiv: 2308.16219 [hep-ph]

FIMPzilla dark matter and conformal sectors

A. Ismail

submitted to Phys. Rev. D; 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]

a-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

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

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

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

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

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