

REBECCA K. LEANE

13. **R. K. Leane** and T. R. Slatyer, “Dark Matter Strikes Back at the Galactic Center”, MIT-CTP/5104, [arXiv:[1904.08430](#) [astro-ph.HE]].
12. M. Un Nisa, J. F. Beacom, S. Y. BenZvi, **R. K. Leane**, T. Linden, K. C.Y. Ng, A. H.G. Peter, B. Zhou, “The Sun at GeV-TeV Energies: A New Laboratory for Astroparticle Physics”, Astro2020 Science White Paper (2019) [arXiv:[1903.06349](#) [astro-ph.HE]].
11. HAWC Collaboration and J.F. Beacom, **R. K. Leane\***, T. Linden, K. C.Y. Ng, A. Peter, B. Zhou, “Constraints on Spin-Dependent Dark Matter Scattering with Long-Lived Mediators from TeV Observations of the Sun with HAWC”, Phys. Rev. D 98 (2018), 123012, MIT-CTP/5038, [arXiv:[1808.05624](#) [hep-ph]].
10. HAWC Collaboration and J.F. Beacom, **R. K. Leane\***, T. Linden, K. C.Y. Ng, A. Peter, B. Zhou, “First HAWC Observations of the Sun Constrain Steady TeV Gamma-Ray Emission”, Phys. Rev. D 98 (2018), 123011, MIT-CTP/5037, [arXiv:[1808.05620](#) [astro-ph.HE]].
9. **R. K. Leane**, T. R. Slatyer, J. F. Beacom, K. C.Y. Ng, “GeV-Scale Thermal WIMPs: Not Even Slightly Dead”, MIT-CTP/5020, Phys. Rev. D98 (2018) no.2, 023016 [arXiv:[1805.10305](#) [hep-ph]].
8. N. F. Bell, Y. Cai, J. B. Dent, **R. K. Leane\***, T. J. Weiler, “Enhancing Dark Matter Annihilation Rates with Dark Bremsstrahlung”, Phys. Rev. D96 (2017) no.2, 023011 [arXiv:[1705.01105](#) [hep-ph]].
7. **R. K. Leane**, K. C.Y. Ng, J. F. Beacom, “Powerful Solar Signatures of Long-Lived Dark Mediators”, Phys. Rev. D95 (2017) no.12, 123016 [arXiv:[1703.04629](#) [astro-ph.HE]].
6. N. F. Bell, Y. Cai, **R. K. Leane\***, “Impact of Mass Generation for Spin-1 Mediator Simplified Models”, JCAP 01 (2017) 039 [arXiv:[1610.03063](#) [hep-ph]].
5. N. F. Bell, Y. Cai, **R. K. Leane\***, “Dark Forces in the Sky: Signals from  $Z'$  and the Dark Higgs”, JCAP 08 (2016) 001 [arXiv:[1605.09382](#) [hep-ph]].
4. N. F. Bell, Y. Cai, **R. K. Leane\***, “Mono- $W$  Dark Matter Signals at the LHC: Simplified Model Analysis”, JCAP 01 (2016) 051 [arXiv:[1512.00476](#) [hep-ph]].
3. N. F. Bell, Y. Cai, J. B. Dent, **R. K. Leane\***, T. J. Weiler, “Dark matter at the LHC: Effective field theories and gauge invariance”, Phys. Rev. D92, no.5 053008 (2015) [arXiv:[1503.07874](#) [hep-ph]].

\*Author list is alphabetical, as per convention in theoretical particle physics.

2. N. F. Bell, Y. Cai, **R. K. Leane\***, A. D. Medina, “Leptophilic dark matter with  $Z'$  interactions”, Phys. Rev. D 90, no.3, 035027 (2014) [arXiv:[1407.3001](#) [hep-ph]].
1. G. Brooijmans et al (incl **R. K. Leane\***), “Les Houches 2011: Physics at TeV Colliders New Physics Working Group Report”, FERMILAB-CONF-12-924-T (2012) [arXiv:[1203.1488](#) [hep-ph]]. (*Note:* Contribution 1, “DLHA: Dark Matter Les Houches Agreement”, is heavily based on my bachelor thesis.)

TEACHING	Guest Lecturer for MIT graduate level course <i>8.811: Particle Physics II</i>	2017
	Lecture Title: “Dark Matter Model Building”	
	ATLAS International Masterclass Tutor, U. Melbourne	2015
	Physics Teaching Assistant (Tutorials, Grading, Office Hours), U. Melbourne	2014
	Physics Teaching Assistant (Lab Demonstrator, Grading), U. Melbourne	2012
	Physics Teaching Assistant (Lab Demonstrator, Grading), Monash U.	2011
OUTREACH	High School Senior Tutoring, Physics and Mathematics	2008–2010
	<b>Key Scientific Researcher on International Science Documentary Series</b>	2014–2015
	<i>“Uranium: Twisting the Dragon’s Tail”</i>	
	Worked with Emmy Award winning producer Sonya Pemberton and writer Wain Fimeri part time over 12 months. Had a major role in explaining science content and developing the script for the series. Aired in the United States, Australia, Germany, France, Middle East, Norway and Sweden. The series has been nominated for and won several science communication and film awards.	
	Open House Talk, MIT Center for Theoretical Physics, Cambridge MA, USA	2018
	Young Scientist Research Prize Talk, Royal Society of Victoria, Australia	2016
	Public Talk, Strathcona Girls’ School, Australia	2014
	Panel Member, National Science Week: Kids Ask Questions, Australia	2013
	Panel Member, National Science Week: Ask a Scientist, Australia	2013
	Public Talk, Monash University Open Day Seminar Series, Australia	2011
SERVICE	Physics Demonstrator, Monash University Open Day, Australia	2011
	Particle Theory Seminar Organizer, MIT Center for Theoretical Physics	2018–Present
	MIT Heising-Simons Physics Research Fellowship Peer Review Committee	2018
TECHNICAL SKILLS	<b>Programming Languages:</b> C/C++, Python, Bash/zsh, HTML/CSS, Mathematica (all working proficiency level)	
	<b>Packages &amp; Frameworks:</b> FeynRules, MadGraph, Pythia, ROOT, MadAnalysis, Fastjet, Delphes, Micromegas, PPC4DMID, DRAGON, FeynArts, FeynCalc, TikZ, Minuit, Matplotlib	
	<b>Other:</b> Linux OS, L <sup>A</sup> T <sub>E</sub> X	

SEMINARS &  
CONFERENCE  
TALKS

*“Dark Matter Strikes Back at the Galactic Center”*

Invited Seminar, KICP, University of Chicago, Chicago IL, USA	Apr 2019
Invited Seminar, Brown University, Providence RI, USA (Upcoming)	Apr 2019
Invited Seminar, Fermilab, Batavia IL, USA	Mar 2019
Invited Seminar, Brandeis University, Boston MA, USA	Mar 2019
Invited Seminar, Princeton University, Princeton NJ, USA	Feb 2019
Invited Talk, TRIUMF Dark Matter Workshop, Vancouver BC, Canada	Feb 2019

*“A Tour of the Universe: The Hunt for Dark Matter”*

Invited Colloquium, University of Melbourne, Melbourne VIC, Australia	Dec 2018
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*“Tricking Non-Poissonian Template Fitting: DM Hiding at the Galactic Center?”*

Parallel Talk, DESY Theory Workshop, Hamburg, Germany	Sep 2018
Seminar, University of Melbourne, Melbourne VIC, Australia	Sep 2018

*“Point Sources at the Galactic Center”*

Parallel Talk, IDM 2018, Providence RI, USA	Jul 2018
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*“GeV-Mass Thermal WIMPs: Not Even Slightly Dead”*

Parallel Talk, IDM 2018, Providence RI, USA	Jul 2018
Invited Talk, PASCOS 2018, Cleveland OH, USA	Jun 2018
Parallel Talk, Pheno 2018 Symposium, Pittsburgh PA, USA	May 2018
Invited Seminar, California Institute of Technology, Pasadena CA, USA	Apr 2018
Invited Seminar, Lawrence Berkeley National Laboratory, Berkeley CA, USA	Apr 2018
Invited Seminar, Michigan Center for Theoretical Physics, Ann Arbor MI, USA	Apr 2018
Invited Seminar, Dartmouth University, Hanover NH, USA	Apr 2018
Seminar, University of Melbourne, Melbourne VIC, Australia	Jan 2018

*“Novel Signatures of Dark Matter in the Sky”*

Invited Seminar, MIT Center for Theoretical Physics, Cambridge MA, USA	Sept 2017
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*“Phenomenology of Particle Dark Matter”*

PhD Completion Seminar, University of Melbourne, Melb VIC, Australia	Mar 2017
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*“Dark Matter Theory and New Searches”*

Invited Talk, CAASTRO-CoEPP Joint Workshop, Melb VIC, Australia	Jan 2017
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*“Novel Signatures of Dark Matter in the Sky”*

Invited Talk, TRIUMF, Vancouver BC, Canada (remote)	Dec 2016
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*“Impact of Mass Generation for Simplified Dark Matter Models”*

Invited Talk, ATLAS Astroparticle Forum Plenary Meeting, CERN (remote)	Nov 2016
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*“Unitarity and Gauge Invariance in Dark Matter Models”*

Invited Talk, CETUP Dark Matter Workshop, Deadwood SD, USA	Jul 2016
Invited Seminar, University of Cincinnati, Cincinnati OH, USA	May 2016

*“Dark Forces in the Sky: Signals from  $Z'$  and the Dark Higgs”*

Invited Seminar, CCAPP, Ohio State University, Columbus OH, USA	Jun 2016
Invited Seminar, UC Riverside, Riverside CA, USA	May 2016
Invited Seminar, UC Irvine, Irvine CA, USA	May 2016
Parallel Talk, Pheno 2016 Symposium, Pittsburgh PA, USA	May 2016
Seminar, University of Melbourne, Melbourne VIC, Australia	Apr 2016

SEMINARS & CONFERENCE	<i>“Dark Matter at the LHC”</i> Invited Seminar, SLAC, Menlo Park CA, USA	Oct 2015
TALKS (CONT'D)	Invited Seminar, CCAPP, Ohio State University, Columbus OH, USA	Oct 2015
	Invited Seminar, Fermilab, Batavia IL, USA	Sep 2015
	Invited Seminar, Vanderbilt University, Nashville TN, USA	Sep 2015
	<i>“Dark Matter at the LHC: EFTs, Gauge Invariance and the Mono-W”</i> Invited Seminar, University of Melbourne, Melbourne VIC, Australia	Aug 2015
	<i>“Dark Matter at the LHC: EFTs and Gauge Invariance”</i> Parallel Talk, SUSY2015, Lake Tahoe CA, USA	Aug 2015
	Seminar, Geoff Opat Seminar Series, U. Melbourne, Melb VIC, Australia	May 2015
	<i>“Leptophilic Dark Matter with Z' Interactions”</i> Parallel Talk, CoSPA2014, Auckland, New Zealand	Dec 2014
	Contributed Talk, RESCEU APCosPA Summer School, Matsumoto, Japan	Jul 2014
	<i>“Dark Matter and the Universe”</i> Invited Seminar, St Edmund's Academic Talks Series, U. Cambridge, UK	Jun 2013

*Cambridge MA, April 21, 2019*