

# Ziqing Hong

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CONTACT INFORMATION	60 St. George St. MP803A Toronto, ON, M5S 1A7, Canada	+1-416-978-6404 zqhong@physics.utoronto.ca
POSITIONS	<b>Assistant Professor</b> , University of Toronto <b>Postdoctoral Fellow</b> , Northwestern University <b>Graduate Research Assistant</b> , Texas A&M University	Jan. 2021 - Nov. 2015 to Dec. 2020 Jan. 2011 to Oct. 2015
EDUCATION	<b>Texas A&amp;M University</b> , College Station, TX Ph.D., Experimental Particle Physics, Dec. 2015 <ul style="list-style-type: none"><li>• Thesis: <i>Measurement of the Forward-Backward Asymmetry of <math>t\bar{t}</math> in the Two Lepton Final State at CDF</i></li><li>• Thesis advisor: Prof. David Toback</li></ul> M.S., Particle Physics Phenomenology, May 2013 <ul style="list-style-type: none"><li>• Title: <i>Prospects for measuring the neutralino mass and lifetime in Gauge Mediated SUSY decays of a Higgs Boson at CDF</i></li><li>• Advisor: Prof. David Toback</li></ul> <b>University of Science and Technology of China</b> , Hefei, China B.S., Physics, June 2010	
RESEARCH EXPERIENCE	<b>University of Toronto</b> SuperCDMS experiment Ricochet experiment <b>SuperCDMS Experiment</b> , Northwestern University <b>Ricochet Experiment</b> , Northwestern University <b>CDF Experiment</b> , Texas A&M, Northwestern University Experiment: <b>CMS Experiment</b> , Texas A&M University	Jan. 2021 - Nov. 2015 to present Nov. 2015 to present Jan. 2011 to present Oct. 2012 to Sep. 2013
	<ul style="list-style-type: none"><li>• Ionization Measurement with Phonons At Cryogenic Temperature (IMPACT) Run Coordinator</li><li>• IMPACT Analysis Working Group Co-Chair</li><li>• Northwestern Experimental Underground Site @ Fermilab (NEXUS) Run Coordinator</li><li>• R&amp;D of future generation of SuperCDMS detectors</li><li>• Prospects for active veto detectors for SuperCDMS Experiment</li><li>• Design of thermal detector with superconductor</li><li>• Forward-backward asymmetry of top-quark pairs at CDF in dilepton final state</li><li>• CDF and Tevatron combination of top forward-backward asymmetry Phenomenology:</li><li>• Prospects of measuring the neutralino mass and lifetime in GMSB scenario at CDF</li><li>• Level-1 jet energy correction at CMS</li></ul>	

HONORS AND  
AWARDS

- *2015 George Bush Presidential Library Foundation Graduate Student Travel Grant*, DPF, 2015
- *Travel Award*, Top@20 workshop, 2015
- *Travel Award*, XXXIV Physics in Collision, 2014
- *Young Scientist Forum Travel Award*, 28th Les Rencontres de Physique de la Vallée d'Aoste, 2014

SELECTED  
PUBLICATIONS

1. *Design and Characterization of a Phonon-Mediated Cryogenic Particle Detector with an eV-Scale Threshold and 100 keV-Scale Dynamic Range*  
R. Ren *et al.*, arXiv:2012.12430
2. *Constraints on low-mass, relic dark matter candidates from a surface-operated SuperCDMS single-charge sensitive detector*  
SuperCDMS Collaboration (R. Agnese *et al.*), Phys. Rev. **D 102**, 091101 (2020)
3. *Constraints on dark photons and axion-like particles from SuperCDMS Soudan*  
SuperCDMS Collaboration (R. Agnese *et al.*), Phys. Rev. **D 101**, 052008 (2020)
4. *Single Electron-Hole Pair Sensitive Silicon Detector with Surface Event Rejection*  
Z. Hong *et al.*, Nucl. Instrum. Meth. **A**, 963, 163757, (2020)
5. *Search for Low-Mass Dark Matter with CDMSlite Using a Profile Likelihood Fit*  
SuperCDMS Collaboration (R. Agnese *et al.*), Phys. Rev. **D 99**, 062001 (2019)
6. *Production Rate Measurement of Tritium and Other Cosmogenic Isotopes in Germanium with CDMSlite*  
SuperCDMS Collaboration (R. Agnese *et al.*), Astropart. Phys., 104, 1 (2019)
7. *Energy Loss Due to Defect Formation from  $^{206}\text{Pb}$  Recoils in SuperCDMS Germanium Detectors*  
SuperCDMS Collaboration (R. Agnese *et al.*), Appl. Phys. Lett. **113**, 092101 (2018)
8. *First Dark Matter Constraints from a SuperCDMS Single-Charge Sensitive Detector*  
SuperCDMS Collaboration (R. Agnese *et al.*), Phys. Rev. Lett. **121**, 051301 (2018)
9. *Nuclear-Recoil Energy Scale in CDMS II Silicon Dark-Matter Detectors*  
SuperCDMS Collaboration (R. Agnese *et al.*), Nucl. Instrum. Meth. **A**, 905, 71 (2018)
10. *Results from the Super Cryogenic Dark Matter Search Experiment at Soudan*  
SuperCDMS Collaboration (R. Agnese *et al.*), Phys. Rev. Lett. **120**, 061802 (2018)
11. *Projected Sensitivity of the SuperCDMS SNOLAB experiment*  
SuperCDMS Collaboration (R. Agnese *et al.*), Phys. Rev. **D 95**, 082002 (2017)
12. *Combined Forward-Backward Asymmetry Measurements in Top-Antitop Quark Production at the Tevatron*  
CDF Collaboration (T. Aaltonen *et al.*), Phys. Rev. Lett. **120**, 042001 (2018)

13. *Low-mass dark matter search with CDMSlite*  
SuperCDMS Collaboration (R. Agnese *et al.*), Phys. Rev. D **97**, 022002 (2017)
14. *Measurement of the forward-backward asymmetry of top-quark and antiquark pairs using the full CDF Run II data set*  
CDF Collaboration (T. Aaltonen *et al.*), Phys. Rev. D **93**, 112005 (2016)
15. *Extrapolation Technique Pitfalls in Asymmetry Measurements at Colliders*  
K. Colletti, Z. Hong, D. Toback, and J.S. Wilson, Nucl. Instrum. Meth. A830 (2016) 176
16. *Measurement of the inclusive leptonic asymmetry in top-quark pairs that decay to two charged leptons at CDF*  
CDF Collaboration (T. Aaltonen *et al.*), Phys. Rev. Lett. **113**, 042001 (2014)
17. *On the Forward-Backward Asymmetry of Leptonic Decays of  $t\bar{t}$  at the Fermilab Tevatron*  
Ziqing Hong *et al.*, Phys. Rev. D **90**, 014040 (2014)
18. *Prospects for measuring the mass of heavy, long-lived neutral particles that decay to photons*  
Ziqing Hong and David Toback, J. of High Energy Phys. 09(2013)041

INVITED TALKS

1. *The SuperCDMS SNOLAB Experiment*, SNOLAB User's Meeting, Aug. 2021
2. *SuperCDMS update*, McDonald Institute Community Virtual Meeting, July 2020
3. *SuperCDMS IMPACT: an Ionization Yield Calibration Program*, APS April 2020, Apr. 2020
4. *Low-energy nuclear recoil calibrations for SuperCDMS*, Magnificent CEvNS 2019, Nov. 2019
5. *SuperCDMS in 10 Minutes*, New Perspectives 2018, June 2018
6. *Top (and bottom-quark) production asymmetries at the Tevatron*  
Top@20 workshop, Fermi National Accelerator Laboratory Seminar, Apr. 2015
7. *Top Quark Properties*, XXXIV Physics in Collision 2014, Sep. 2014
8. *On Measuring the Leptonic Forward-Backward Asymmetry at the Tevatron and Recent Results from CDF*  
28th Les Rencontres de Physique de la Vallée d'Aoste, Feb. 2014

SEMINARS AND COLLOQUIA

1. *Probing Dark Matter with SuperCDMS in the Era of eV Sensitivity*, Seminar, University of Toronto, Mar. 2020
2. *Probing Dark Matter with SuperCDMS in the Era of eV Sensitivity*, Colloquium, Queen's University, Feb. 2020

3. *Measurement of the Forward-Backward Asymmetry of  $t\bar{t}$  at the Fermilab Tevatron*
  - High Energy Seminar, University of British Columbia, May 2015
  - Astronomy Seminar, Fermi National Accelerator Laboratory, Apr. 2015
  - High Energy Seminar, University of Florida, Jan. 2015
  - High Energy Seminar, University of Illinois at Urbana-Champaign, Dec. 2014
  - High Energy Experimental Seminar, Rutgers University, Sep. 2014
  - Fermi National Accelerator Laboratory Seminar, Sep. 2014
  - SLAC National Accelerator Laboratory Seminar, July 2014