

Yuri Oksuzian

Curriculum Vitae

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Education

- 2003–2009 **Ph.D. Physics**, *University of Florida*, Gainesville, FL.
1997–2003 **B.S. Physics**, *Tbilisi State University*, Tbilisi, Georgia.

Ph.D. thesis

- Title *Search for resonant production of top antitop pairs decaying into multi-jets at the collider detector at Fermilab*
Supervisor J. Konigsberg

Research experience

- 2010–Current **Research Scientist**, *University of Virginia*, Charlottesville.
Experiments: Mu2e, NO ν A, CDF

Mu2e:

- Cosmic Ray Veto (CRV) R&D
- CRV prototypes fabrication
- Neutron Working Group convener
- Studies of radiation background and its implications to the CRV design
- Measurement of the CRV counter prototype efficiency at test beam facility
- Measurement and simulation of the CRV prototype sensitivity to neutrons
- L3 manager for CRV WLS fibers

NO ν A:

- Dark matter search with upward going muon signature
- Data driven trigger implementation
- NO ν A production database support

CDF:

- Search for Higgs boson in WH channel with the full CDF dataset
- Measurement of single top s-channel cross section using CDF full dataset
- Search for resonant $t\bar{t}$ production in the full CDF dataset
- CDF silicon tracker operations

2003–2010 **Research Assistant**, *University of Florida*, Gainesville.
Experiment: CDF

CDF:

- Search for $t\bar{t}$ resonant states in the all jets final state
- CDF luminosity counter operations

Awards and Honors

2011 **Universities Research Association Fermilab Visiting Scholars Program**, *Fermilab*.

2003-2007 **University of Florida Fellowship**, *University of Florida*.

1997 **Third prize, International Young Physicist Tournament**, *Cheb, Czech Republic*.

Teaching Experience

2004-2005 **Teaching Assistant**, *Department of Physics, University of Florida*.

2010-Curent **Supervision of the high school, undergraduate and graduate level students in elementary particles research**, *Fermilab, UVa*.

Skills

Computer Skills: C++, Python, PostgreSQL, BASH, HTML, Latex

Analysis Software: Geant4, G4beamline, ROOT, LabVIEW

Languages: English, Georgian, Russian

Conference Presentations and Posters

Mu2e

- Aug 9, 2017 **Argonne Division Seminar**, *The Mu2e experiment at Fermilab: Hunting for new physics with muons*, Argonne, USA.
- Aug 2, 2017 **DPF 2017**, *Studies of Beam Induced Radiation Backgrounds at the Mu2e Experiment and Implications for the Cosmic Ray Veto Detector Operations*, Fermilab, USA.
- Aug 1, 2017 **DPF 2017**, *Studies of effect of aging and studies to optimize scintillation counter response for the Mu2e Cosmic Ray Veto System*, Fermilab, USA.
- Jul 31, 2017 **DPF 2017**, *The Mu2e Experiment at Fermilab*, Fermilab, USA.
- May 15, 2017 **BLV 2017**, *The Mu2e Experiment at Fermilab*, Cleveland, USA.
- Aug 6, 2016 **ICHEP 2016**, *Studies of Beam Induced Radiation Backgrounds for the Cosmic Ray Veto Detector Operations at the Mu2e Experiment*, Chicago, USA.
- Jun 22, 2016 **CLFV 2016**, *Wavelength-Shifting Fiber Performance for the Mu2e Cosmic Ray Veto*, Charlottesville, USA.
- Jun 22, 2016 **CLFV 2016**, *Studies of Beam Induced Radiation Backgrounds for the Cosmic Ray Veto Detector Operations at the Mu2e Experiments*, Charlottesville, USA.
- Aug 04, 2015 **DPF 2015**, *A Cosmic Ray Veto Detector for the Mu2e Experiment at Fermilab*, Michigan, USA.
- Aug 04, 2015 **DPF 2015**, *Wavelength-Shifting Fiber Performance for the Mu2e Cosmic Ray Veto*, Michigan, USA.
- Aug 07, 2015 **DPF 2015**, *Studies of Beam Induced Radiation Backgrounds at the Mu2e Experiment and Implications for the Cosmic Ray Veto Detector Operations*, Michigan, USA.
- Jun 10, 2015 **International Symposium on Symmetries in Subatomic Physics**, *The Mu2e Experiment at Fermilab*, Victoria, Canada.
- Jun 11, 2014 **Fermilab Users Meeting**, *Mu2e experiment*, Fermilab, Batavia, IL.
- Jun 11, 2011 **Technology and Instrumentation in Particle Physics**, *R&D Effort for Plastic Scintillator Based Cosmic Ray Veto System for the Mu2e Experiment*, Chicago, IL.
- Jun 1, 2011 **New Perspectives**, *Cosmic Ray Veto R&D for Mu2e experiment*, Fermilab, Batavia, IL.

CDF

- Aug 28, 2013 **16th Lomonosov Conference on Elementary Particle Physics**, *Latest results from Tevatron*, Moscow, Russia.
- Mar 13, 2013 **Moriond QCD and High Energy Interactions**, *Searches for New Physics in Top Events at the Tevatron*, La Thuille, Italy.
- Aug 8, 2012 **BNL Particle Physics Seminar**, *Higgs boson searches at the Tevatron*, BNL, Upton, NY.
- May 29, 2012 **CIPANP 2012, Invited talk**, *Search for the Higgs boson at the Tevatron*, St. Petersburg, Florida.

- Mar 31, 2012 **APS 2012 April Meeting**, *Improved b-tagging strategy for Higgs searches at CDF*, Atlanta, Georgia.
- May 10 2010 **Phenomenology Symposium**, *Resonance search in $p\bar{p} \rightarrow X^0 \rightarrow t\bar{t}$* , Madison, Wisconsin.
- May 5, 2009 **APS 2009 April Meeting**, *Resonance search in all-hadronic channel*, Denver, Colorado.
- April 14, 2008 **APS 2008 April Meeting**, *Resonance search in all-hadronic channel*, St. Louis, Missouri.

Selected Publications

“Studies to Understand and Optimize the Performance of Scintillation Counters for the Mu2e Cosmic Ray Veto System”, Peter Farris et al., arXiv:1709.09831 (2017)

“Photoelectron Yields of Scintillation Counters With Embedded Wavelength Shifting Fibers Read Out Using Silicon Photomultipliers”, A. Artikov et al., Submitted to: Nucl.Instrum.Meth.A, arXiv:1709.06587 (2017)

“Radiation Tests of Hamamatsu Multi-Pixel Photon Counters”, G. Blazey et al., under Mu2e collaboration review. (2017)

“Search for active-sterile neutrino mixing using neutral-current interactions in NOvA”, P. Adamson et al. [NOvA Collaboration], Phys. Rev. Lett. D96, 072006 (2017)

“Constraints on oscillation parameters from νe appearance and $\nu\mu$ disappearance in NOvA”, P. Adamson et al. [NOvA Collaboration], Phys. Rev. Lett. 118, 231801 (2017)

“Measurement of the neutrino mixing angle θ_{23} in NOvA”, P. Adamson et al. [NOvA Collaboration], Phys. Rev. Lett. 118, 151802 (2017)

“Progress in the Search for Dark Matter Using Upward-going Muons in NOvA”, L. Aliaga et al, PoS(ICHEP2016), 201 (2016)

“Search for Dark Matter Using Upward-going Muons in NOvA”, L. Aliaga et al., PoS(ICHEP2016), 1185 (2016)

“Studies of Beam Induced Radiation Backgrounds for the Cosmic Ray Veto Detector Operations at the Mu2e Experiment”, I. Oksuzian, PoS(ICHEP2016), 850 (2016)

“First measurement of muon-neutrino disappearance in NOvA”, P. Adamson et al. [NOvA Collaboration], Phys. Rev. D93, 051104 (2016)

“First measurement of electron neutrino appearance in NOvA”, P. Adamson et al. [NOvA Collaboration], Phys. Rev. Lett. 116, 151806 (2016)

“Performance of the NOvA Data Acquisition and Trigger Systems for the full 14 kT Far Detector”, A. Norman et al., J.Phys. Conf. Ser. 664, 082041 (2015)

“Fermilab Testbeam Facility Annual Report - FY 2015”, M.G. Albrow et al., FERMILAB-TM-2615-DI (2015)

“Performance of Scintillator Counters with Silicon Photomultiplier Readout”, A. Artikov et al., DPF Proceedings, arXiv:1511.00374 (2015)

“A First Look at Data from the NOvA Upward-Going Muon Trigger”, E. Culbertson et al., DPF Proceedings, arXiv:1511.00155 (2015)

“Implementation of an upward-going muon trigger for indirect dark matter searches at the NO ν A far detector”, R. Mina et al, J. Phys.: Conf. Ser. 664 082034 (2015)

“Performance of Scintillator Counters with Silicon Photomultiplier Readout”, A. Artikov et al., DPF Proceedings, arXiv:1511.00374 (2015)

“Performance of Wavelength-Shifting Fibers for the Mu2e Cosmic Ray Veto Detector”, G. DeZoort et al., arXiv:1511.00374 (2015)

“Mu2e Technical Design Report”, arXiv:1501.05241 (2015)

“Observation of s-Channel Production of Single Top Quarks at the Tevatron”, Phys. Rev. Lett. **112**, 231803 (2014)

“Evidence for s-channel single-top-quark production in events with one charged lepton and two jets at CDF”, Phys. Rev. Lett. **112**, 231804 (2014)

“Measurements of Photoelectron Yields for Prototype Mu2e Cosmic Ray Veto Scintillation Counters”, <http://inspirehep.net/record/1254761> (2013)

“Feasibility Study for a Next-Generation Mu2e Experiment”, arXiv:1307.1168 (2013)

“Design considerations for the cosmic-ray-veto system of the Mu2e experiment at Fermilab”, arXiv:1310.1377 (2013)

“Mu2e Conceptual Design Report”, arXiv:1211.7019 (2013)

“Search for Resonant Top-Antitop Production in the Lepton Plus Jets Decay Mode Using the Full CDF Data Set”, Phys. Rev. Lett. **110**, 121802 (2013)

“Searches for the Higgs boson at the Tevatron”, arXiv:1209.1586v2 (2012)

“Evidence for a Particle Produced in Association with Weak Bosons and Decaying to a Bottom-Antibottom Quark Pair in Higgs Boson Searches at the Tevatron”, Phys. Rev. Lett. **109**, 071804 (2012)

“Combined Search for the Standard Model Higgs Boson Decaying to a $b\bar{b}$ Pair Using the Full CDF Data Set” Phys. Rev. Lett. **109**, 111802, (2012)

“Search for the Standard Model Higgs Boson Decaying to a $b\bar{b}$ Pair in Events with One Charged Lepton and Large Missing Transverse Energy Using the Full CDF Data Set”, Phys. Rev. Lett. **109**, 111804 (2012)

“Introduction to HOBIT, a b-Jet Identification Tagger at the CDF Experiment Optimized for Light Higgs Boson Searches”, arXiv:1205.1812v1, 2012

“A search for resonant production of $t\bar{t}$ pairs in 4.8 fb^{-1} of integrated luminosity of $p\bar{p}$ collisions at $\sqrt{s} = 1.96 \text{ TeV}$ ”, Phys. Rev. D **84**, 072004 (2011)

“Search for resonant production of $t\bar{t}$ decaying to jets in $p\bar{p}$ collisions at $\sqrt{s} = 1.96 \text{ TeV}$ ”, Phys. Rev. D **84**, 072003 (2011)

“Top quark mass measurement with $t\bar{t}$ matrix element from all hadronic channel in $p\bar{p}$ collisions”, Phys. Rev. D **79**, 072010 (2009)

“Co-author of 380 journal publications.”

Students Supervision

2010–2014 **Research Associate**, *University of Virginia*, Charlottesville.

- CRV module prototype: (High school) Keegan Freiburger, Jeff Liehti, Jake Prebys, Amy Allen, Evan Schiewe, Jacob Schwinger
- Measurement of CRV counter response to neutrons: (Undergraduate) Jefferson Lansford, David Abbott
- Test beam data analysis of CRV counter prototypes: (Undergraduate) Yongyi Wu
- SiPM properties: (Undergraduate) Alyssa Henderson, Nina Mazzealli
- Aging studies of scintillator and WLS fibers: (Undergraduate) Peter Farris, Tyler Lam
- Reflectivity studies: (Undergraduate) Pedrom Zadeh
- Dark Matter search on NO ν A: (Undergraduate) Ranjani Sarma, Sophia Xiao, Robert Mina, Eric Fries. (Graduate) Cristiana Principato, Serdar Kurbanov
- Measurement of single top s-channel cross section on CDF: (Graduate) Hao Liu
- CRV simulations: (Graduate) Steve Boi

Membership

American Physical Society (APS)

Experiments: Mu2e, NO ν A, CDF

References

Dr. Craig Group

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