

# 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 Associate**, *University of Virginia*, Charlottesville.

Experiments: CDF, Mu2e, NO $\nu$ A

### Mu2e:

- R&D for Cosmic Ray Veto (CRV) veto shielding. Optimization for scintillator geometry, photo-detector type and wave length shifting (WLS) fibers
- Measurement of CRV counter prototype efficiency at the test beam facility at Fermilab
- Measurement of CRV module prototype efficiency with cosmic data
- Studies of neutron and gamma ray radiation at the Mu2e experiment and implications for the Cosmic Ray Veto design
- Measurement and simulation of CRV prototype sensitivity to neutrons
- L3 manager for CRV WLS fibers: cost estimates and R&D design for procurement, Q&A design and fabrication, fiber preparation and mounting

### NO $\nu$ A:

- NO $\nu$ A production database support
- Data driven trigger implementation
- Searches for dark matter candidate with upper going muon signature

### CDF:

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

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

**CDF:**

- Search for non-standard model  $t\bar{t}$  resonance states in the all jets final state channel
- Operations support for the Cherenkov Luminosity Counters: Senior project leader, studies on the PMT lifetime and gain stability, offline and online software support

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## 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*.

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## 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*.

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## Skills

- Computer Skills: Mac OS, Linux, Windows OS, MS Office, C++, Python, PostgreSQL, BASH, HTML, Latex.
- Analysis Software: Pythia, Herwig, Geant4, G4beamline, MCNP, ROOT, LabVIEW
- Languages: English, Georgian, Russian
- Qualities: Motivated, hardworking, organized, collegial

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## Conference and Seminar Presentations

### Mu2e

- Aug 16, 2013 **DPF 2013**, *Design considerations for the cosmic-ray-veto system of the Mu2e experiment at Fermilab*, Santa Cruz, USA.
- 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.

- Sep 21, 2012 **Annual Postdoctoral Research Symposium**, *Higgs boson searches at the Tevatron*, ANL, Argonne, IL.
- 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.

## Students Supervision

2010–2013 **Research Assistant**, *University of Florida*, Gainesville.  
Experiments: CDF, Mu2e

- Supervision of high school students on CRV module studies: Keegan Freiburger, Jeff Liechti, Jake Prebys, Amy Allen, Evan Schiewe and Jacob Schwinger. Results are documented and presented at the Fermilab group meetings
- Supervision of UVa undergraduate students on PMT and SiPM properties and measurement of counter response to fast neutrons: Jefferson Lansford, Alyssa Henderson and David Abbott. Results are presented at APS conferences
- Supervision of UVa graduate student on measurement of single top s-channel cross section: Hao Liu. Results are presented at various conferences

## Selected Publications

“Feasibility Study for a Next-Generation Mu2e Experiment”, arXiv:1307.1168, 2013, White Paper for the APS Division of Particles and Fields Community Summer Study

“Design considerations for the cosmic-ray-veto system of the Mu2e experiment at Fermilab”, arXiv:1310.1377, 2013, Proceedings to DPF Meeting of the American Physical Society Division of Particles and Fields

“Mu2e Conceptual Design Report”, arXiv:1211.7019, CDR.

“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, proceedings to Conference on the Intersections of Particle and Nuclear Physics(CIPANP) 2012 conference.

“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  $4.8 \text{ fb}^{-1}$  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)

“Topping off a search for new particles”, Fermilab Result of the Week, 2009

“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 350 journal publications.

## Summer Schools and Conferences

- 2009 The CTEQ Summer School, Madison, WI
- 2008 Hadron Collider Physics Symposium, Galena, IL
- 2006 The Hadron Collider Physics Summer School, Fermilab, Batavia, IL
- 2004 The CTEQ Summer School, Madison, WI

## Membership

American Physical Society (APS)  
Experiments: Mu2e, NOvA, CDF