

Dr. DMITRI TSYBYCHEV

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Professional Preparation

Moscow State University	Physics	Diploma of Higher education	1997
University of Florida, Gainesville	Physics	Ph.D.	2004

Appointments

Stony Brook University, Stony Brook, NY Associate Professor of Physics	2015 – present
Tomsk State University, Tomsk Russia Visiting Professor	2018 – present
Stony Brook University, Stony Brook, NY Assistant Professor of Physics	2009 – 2014
Stony Brook University, Stony Brook, NY Assistant Research Professor of Physics	2008 – 2009
Stony Brook University, Stony Brook, NY Postdoctoral Research Associate	2004 – 2008

Synergistic activities:

Reviewer of NSF CAREER grant proposals and member of EPP panels.
Chair and member of ATLAS internal Editorial Boards
Stony Brook University representative to the ATLAS Collaboration Board
Stony Brook University representative to the ATLAS Pixel Institutional Board
Stony Brook University representative to the ATLAS ITk Institutional Board
Member of review panel of sPHENIX pixel detector, 2018;
Member of DØ internal Editorial Boards
US ATLAS Speakers Committee 2011 – 2012
US ATLAS Analysis Support panel 2011 – 2012
Co-leader of the B-physics group at DØ experiment, 2007 – 2009.
Co-leader of the silicon detector group at D0 experiment 2005 – 2007.

University Service:

Graduate admission committee member and chair
University senate environment committee
Faculty Advisor for Minority Association of Premedical Students
Departmental Colloquium committee member
Electronic evaluation form committee member

Awards and Honors:

High Energy and Particle Physics Prize of the European Physical Society (as a member of CDF and D0 Collaboration), 2019;
Mega-grant, an International Scientific Program, Tomsk Russia, 2018

DOE US ATLAS Fellow, 2016;
High Energy and Particle Physics Prize of the European Physical Society (as a member of ATLAS Collaboration), 2013;
NSF CAREER Award, 2012;
DOE US ATLAS Fellow 2011;
T. Scott Memorial Award 2004;

Selected Publications:

I am an author of more than 1400 publications with the CDF, D0 and ATLAS Collaborations. Below is the list of recent selected publications, where I played a key role in the analysis and authorship of the paper.

Physics Papers

1. *A search for the dimuon decay of the Standard Model Higgs boson with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], Phys. Lett. B **812** (2021) 135980;*
2. *Measurement of VH , $H \rightarrow bb$ production as a function of the vector-boson transverse momentum in 13 TeV pp collisions with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], JHEP 05 (2019) 141;*
3. *Search for electroweak diboson production in association with a high-mass dijet system in semileptonic final states in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], Phys. Rev. D 100 (2019) 032007;*
4. *Observation of $H \rightarrow bb$ decays and VH production with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], Phys. Lett. B 786 (2018) 59;*
5. *Search for WW/WZ resonance production in $\ell\nu qq$ final states in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], JHEP 03 (2018) 042;*
6. *Search for heavy resonances decaying into a W or Z boson and a Higgs boson in final states with leptons and b -jets in 36 fb^{-1} of $\sqrt{s}=13$ TeV pp collisions with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], JHEP 03 (2018) 174;*
7. *Evidence for the $H \rightarrow bb$ decay with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], JHEP 12 (2017) 024;*
8. *Search for the dimuon decay of the Higgs boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], Phys. Rev. Lett. 119 (2017) 051802;*
9. *Search for anomalous electroweak production of WW/WZ in association with a high-mass dijet system in pp collisions at $\sqrt{s}=8$ TeV with the ATLAS detector, G.Aad et al., [ATLAS Collaboration], Phys. Rev. D 95 (2017) 032001;*
10. *Searches for heavy diboson resonances in pp collisions at $\sqrt{s}= 13$ TeV with the*

ATLAS detector, G.Aad et al., [ATLAS Collaboration], JHEP 09 (2016) 173;

11. *Measurements of the Higgs boson production and decay rates and constraints on its couplings from a combined ATLAS and CMS analysis of the LHC pp collision data at $\sqrt{s}=7$ and 8 TeV*, G.Aad et al., [ATLAS Collaboration], JHEP 08 (2016) 045;
12. *Measurements of the Higgs boson production and decay rates and coupling strengths using pp collision data at $\sqrt{s}=7$ and 8 TeV in the ATLAS experiment*, G.Aad et al., [ATLAS Collaboration], Eur. Phys. J. C (2016) 76:6;
13. *Search for a high-mass Higgs boson decaying to a W boson pair in pp collisions at $\sqrt{s}=8$ TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], JHEP 01 (2016) 032;
14. *Measurement of the combined WW+WZ cross section and limits on anomalous triple gauge couplings using final states with one lepton, missing energy, and two jets with the ATLAS detector at $\sqrt{s} = 7$ TeV*, G.Aad et al., [ATLAS Collaboration], JHEP 01 (2015) 049;
15. *Measurements of Higgs boson production and couplings in the four-lepton channel in pp collisions at center-of-mass energies of 7 and 8 TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], Phys. Rev. D 91 (2015) 012006;
16. *Fiducial and differential cross sections of Higgs boson production measured in the four-lepton decay channel in pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], Phys. Lett. B 738 (2014) 234-253;
17. *Measurement of the Higgs boson mass from the $H \rightarrow \gamma\gamma$ and $H \rightarrow ZZ^* \rightarrow 4\ell$ channels in pp collisions at center-of-mass energies of 7 and 8 TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], Phys. Rev. D. 90 (2014) 052004;
18. *Search for the Standard Model Higgs boson decay to $\mu+\mu^-$ with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], G.Aad et al., [ATLAS Collaboration], Phys. Lett. B 738 (2014) 68-86;
19. *Search for second generation scalar leptoquarks in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], Eur. Phys. J. C 72 (2012) 2151;
20. *Search for first generation scalar leptoquarks in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], Phys. Lett. B 709 (2012) 158;
21. *Study of jets produced in association with a W boson in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], Phys. Rev. D 85 (2012) 092002;
22. *Search for pair production of first or second generation leptoquarks in proton-proton collisions at $\sqrt{s} = 7$ TeV using the ATLAS detector at the LHC*, G.Aad et al.,

[ATLAS Collaboration], *Phys. Rev. D* 83 (2011) 112006;

23. *Measurement of the production cross section for W-bosons in association with jets in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], *Phys.Lett. B*698 (2011) 325-345;

Instrumentation papers:

1. *Tree rings in Large Synoptic Survey Telescope production sensors: its dependence on radius, wavelength, and back bias voltage*, H.Y. Park, S. Karpov, A. Nomerotski and D. Tsybychev, *J. of Astronomical Telescopes, Instruments, and Systems*, 6(1), 011005 (2020);
2. *Properties of tree rings in LSST sensors*, H.Y. Park, A. Nomerotski and D. Tsybychev, *JINST* 12 (2017) C05015;
3. *A study of astrometric distortions due to "tree rings" in CCD sensors using LSST Photon Simulator* B. Beamer, A. Nomerotski, D. Tsybychev, *JINST* 10 (2015) 05, C05027;
4. *A systematic study of BNL's 3D-Trench Electrode detectors*, A. Montalbano, D. Bassignana, Z. Li, S. Liu, D. Lynn, D. Tsybychev et al., *Nucl. Instrum. Meth. A* 765 (2014) 23-28;
5. *Prototype ATLAS IBL modules using the FE-I4A front-end readout chip*", J. Albert et al., [ATLAS IBL Collaboration], *JINST* 7, 11010, (2012);
6. "Prototype ATLAS IBL modules using the FE-I4A front-end readout chip", J. Albert et al., [ATLAS IBL Collaboration], *JINST* 7, (2012) 11010;
7. "Test beam results of 3D silicon pixel sensors for the ATLAS upgrade", P. Grenier et al., *Nucl. Instrum. Meth. A* **638**, 33-40, (2011);
8. "3D-FBK pixel sensors: Recent beam tests results with irradiated devices", A. Micelli et al., *Nucl. Instrum. Meth. A*650, (2011), 150-157;
9. "Tracking efficiency and charge sharing of 3D silicon sensors at different angles in a 1.4 T magnetic field," H. Gjersdal et. al., *Nucl. Instrum. Meth. A*636, S42-S49 (2011);
10. "3D silicon pixel sensors: Recent test beam results", P. Hansson et. al., *Nucl. Instrum. Meth. A*628, 216-220 (2011);
11. "ATLAS Insertable B-Layer", *Technical Design Report, Preprint ATLAS TDR 19, CERN/LHCC 2010-013*;

Review Papers:

1. *LHC Forward Physics*, K. Akiba et al., *J.Phys.G* 43 (2016) 110201;

2. *Recent results from ATLAS and CMS on Higgs, supersymmetry and physics beyond the standard model searches*, S. Nahn, D. Tsybychev, *Int. J. Mod. Phys. A* 28 (2013) 1330026;
3. *B Physics at the Tevatron*, C. Paus, D. Tsybychev, *Ann. Rev. Nucl. Part. Sci.* 59 (2009) 467-504;

Papers as Editorial Board Member:

1. *Search for dijet resonances in events with an isolated charged lepton using $\sqrt{s}=13$ TeV proton-proton collision data collected by the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], *JHEP* 06 (2020) 151;
2. *Measurement of distributions sensitive to the underlying event in inclusive Z-boson production in proton-proton collisions at $\sqrt{s}=7$ TeV with the ATLAS detector*, G.Aad et al., [ATLAS Collaboration], *Eur. Phys. J. C* (2014) 74:3195;
3. *Studies of $X(3872)$ and $\psi(2S)$ production in $p\bar{p}$ collisions at 1.96 TeV*, V. Abazov et al, [D0 Collaboration], *Phys. Rev. D* 102 (2020) 7, 072005;
4. *Properties of $Z_c^\pm(3900)$ Produced in $p\bar{p}$ Collision*, V. Abazov et al, [D0 Collaboration], *Phys. Rev. D* 100 (2019), 012005;
5. *Evidence for $Z_c^\pm(3900)$ in semi-inclusive decays of b-flavored hadrons*, V. Abazov et al, [D0 Collaboration], *Phys. Rev. D* 98 (2018) 5, 052010;
6. *Study of the $Z_c^\pm(3900)$ state with semileptonic decays of the B_s^0 meson*, V. Abazov et al, [D0 Collaboration], *Phys. Rev. D* 97 (2018) 9, 092004;
7. *Measurement of the direct CP violating charge asymmetry in $B^\pm \rightarrow \mu^\pm \nu_\mu D^0$ decays*, V. Abazov et al, [D0 Collaboration], *Phys. Rev. D* 95 (2017) 3, 031101;
8. *Evidence for a $B_s^0 \pi^\pm$ state*, V. Abazov et al, [D0 Collaboration], *Phys. Rev. Lett.* 117 (2016) 2, 022003;
9. *“Measurement of the Λ_b^0 lifetime in the exclusive decay $\Lambda_b^0 \rightarrow J/\psi \Lambda^0$ in proton-antiproton collisions at $\sqrt{s}=1.96$ TeV”*, V.M. Abazov et al., [DØ Collaboration], *Phys. Rev. D* 85, (2012), 112003;

Conference Talks

1. *“Recent heavy flavor results from Tevatron”*, 5th Annual Conference on Large Hadron Collider physics, Shanghai, China, May 15-20, 2017
2. *“Search for a high-mass Higgs boson in bosonic decay modes at ATLAS”*, 24th International Conference on Supersymmetry and Unification of Fundamental

Interactions, Melbourne, Australia, July 3-8, 2016

3. *"Study of Electroweak WW/WZ production accompanied with high invariant-mass di-jet system", American Physical Society April Meeting, Salt Lake City, UT, USA April 15 -19, 2016*
4. *"Measurement of Multi-Boson Production with the ATLAS detector", 19th International Symposium on Particles, Strings and Cosmology, Taipei, Taiwan, November 20-26, 2013*
5. *"Rare Higgs boson decays at ATLAS", BNL Forum 2013, Upton, NY USA, May 1- 3, 2013*
6. *"Searches for CP violation in the B^0_s system using $B^0_s \rightarrow J/\psi(\phi, f_0, f_2)$ decays", XXXVI International Conference on High Energy Physics, Melbourne, Australia, July 4-11, 2012*
7. *"Measurement of multi-boson production with the ATLAS detector", 19th International Symposium on Particles, Strings and Cosmology, Taipei, Taiwan, November 2013;*
8. *"Rare Higgs boson decays at ATLAS", Brookhaven Forum 2013, Brookhaven National Laboratory, Upton, NY, May 2013;*
9. *"Jets and W/Z+jets results from ATLAS", 15th Lomonosov Conference on Elementary Particle Physics, Moscow, Russia August 2011;*
10. *"New results from ATLAS" Joint Experimental-Theoretical Seminar, Fermi National Accelerator Laboratory, Batavia, Illinois, July 2011;*
11. *"Measurements of CP violation at the Tevatron", 23rd Rencontres de Blois on Particle Physics and Cosmology Blois, France, May 2011;*
12. *"Searches for new sources of CP violation" Colloquium Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY September 2010;*
13. *"Evidence for an Anomalous Like-Sign Dimuon Charge Asymmetry", Brookhaven Forum 2010, Brookhaven National Laboratory, Upton, NY, May 2010;*
14. *"Evidence for an Anomalous Like-Sign Dimuon Charge Asymmetry", The John Hopkins Workshops on Current Problems in Particle Physics, John Hopkins University, Baltimore MD, May 2010;*
15. *"Rare B-meson decays at the Tevatron", Rencontre de Moriond, La Thuille, Italy, March 2010;*

Advisees:

Graduate students:

HyeYun Park PhD 2019

Aungshuman Zaman PhD 2017
David Puldon PhD 2014
John Stupak PhD 2012
Burton DeWilde PhD 2012
Benjamin Beamer MS 2015

Postdoctoral research fellows supervised:

Vakhtang Tsiskaridze
Brian Lindquist
Haifeng Li
Carolina Deluca Silberberg
Erik Devetak