# Theodoros Christoudias

## Curriculum Vitæ

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## Education

2005–2009 PhD Physics, Imperial College London, UK.

2002–2005 BSc Physics, Imperial College London, UK.

1st Class Honours

# **Employment**

2021 — Associate Professor, Cyprus Institute.

Steering Group Member, EMAC Model International Multi-Institutional Consortium

Institute Principal Investigator, CERN CLOUD Experiment Consortium

2014–2021 Assistant Professor, Cyprus Institute.

Earth System Modelling

2012–2014 Associate Research Scientist, Cyprus Institute.

Dynamical Exascale Entry Platform (DEEP)

2010–2012 Computational Scientist, Cyprus Institute.

2006–2009 International Fellow, Fermilab, USA.

## Associations & Memberships

2005 Associate of the Royal College of Science (ARCS), UK

2005 Associate Member, Institute of Physics, UK

2012 – Member, European Geosciences Union (EGU)

2014 – Member, American Geophysical Union (AGU)

# Fellowships & Awards

2022 MACLEAN Best Paper Award

2019 CYI Innovation Award

2006–2009 Fermilab International Fellowship

2005 A.G. Leventis Foundation Grant

2004 Imperial College London UROP

## Research Interests

- o Earth System Modelling
- o Air Quality
- High Performance Computing (HPC)

### Grants

- 2020–2023 QEERI, Qatar Environment and Energy Research Institute, 450K USD. Atmospheric Dispersion of Pollutants
- 2020–2021 VECTOR, Copernicus Climate Change Service (C3S), ECMWF, 120K EUR. Vector Climate Threat Online Resource
- 2019–2023 GAIA, Cyprus Research & Innovation Foundation (RIF), PRE-SEED, 100K EUR. Geospatial Artificial Intelligence Analytics
- 2022–2025 CLOUD-DOC, Marie Skłodowska-Curie Actions.
  CLOUD Doctoral Network
- 2022–2025 SIRIUS, LIFE Environmental Governance and Information.

  A System for Integrated EnviRonmental Information in Urban areaS
- 2020–2024 ACCEPT, Norway Grants, Work Package Leader (Modelling), 800K EUR.
  Assessment of Climate Change Effect on Pollution Transport
- 2019–2023 NI4OS, EU Horizon 2020, Climate Scientific Community Leader, 5.6M EUR. National Initiatives for Open Science in Europe
- 2020–2022 META-SAT, European Space Agency (ESA) PECS, Scientific Expert, 220K EUR.

  Modeling of Emissions, Trends and Air quality, using Satellite measurements
- 2019–2021 AQ-SERVE, RIF Integrated, Work Package Leader (Air Quality Modelling), 1M EUR.
  Air Quality Services for a cleaner air in Cyprus
- **2017–2019** Vi-SEEM, EU Horizon 2020, Climate Scientific Community Leader, 3.3M EUR. Virtual Research Environment in Southeast Europe and the Eastern Mediterranean

### Service

#### Peer Review & Editorial Boards

Atmospheric Chemistry and Physics (ACP), Geoscientific Model Development (GMD), Atmospheric Environment, Science of the Total Environment, Atmospheric Pollution Research, Aerosol and Air Quality Research, Environment International Journal, Atmosphere (Section Board Member 2020–2021, Advisory Board 2021–2023), Modelling (Editorial Board Member 2020–2021), Climate (Editorial Board Member 2018–2014), The Open Atmospheric Science Journal (Editorial Board Member 2018–2019), Scalable Computing: Practice and Experience (Special Issue Guest Editor), Remote Sensing Applications: Society and Environment (RSASE), Urban Science, Environmental Science & Technology, Journal of Environmental Radioactivity, Climate Dynamics

### Conference Programme Committees

- 2021–2023 ISC High Performance
  - 2018 Data Management and Semantic Strucures for Cross-disciplinary Research, Cyprus
  - 2018 e-Infrastructures for Excellent Science, Sofia, Bulgaria
  - 2017 IEEE EUROCON: 17th IEEE International Conference on Smart Technologies

#### Ad Hoc Review of Proposals

o French State "Investissements d'Avenir" Research Grants

- National Natural Science Foundation of China (NSFC) / Hong Kong Research Grant Council (RGC) Joint Research Scheme
- o Hungarian National Research, Development and Innovation Office (NKFIH)
- Science Fund of the Republic of Serbia (PROMIS and IDEAS programmes)
- o European Commission Horizon 2020, Horizon Europe
- National Science Centre Poland
- French National Research Agency (ANR)

#### **Expert Committees**

- 2022 Programme Committee Expert, "Climate, Energy and Mobility", Horizon Europe
- 2021 National Representative, Cluster 5 Programme, Horizon Europe
- 2018 Nominated Expert, Comprehensive Test-Ban Treaty Organisation (CTBTO)
- 2016 National Representative, EU SET-Plan Working Group on Nuclear Safety

#### Intramural (Cyprus Institute)

2014–2016 Colloquium Committee, Chair.

Organised 37 bi-weekly colloquium talks by prominent speakers, distinguished academics and scientists

2019 — Quality Assurance Committee, Member, Graduate School.

Committee for assuring alignment of the quality assurance standards of the Graduate School of the Cyprus Institute with the regulations of the relevant bodies of the Government of Cyprus

2019 - ERASMUS Committee, Member, Graduate School.

Reviewing candidate applications for Erasmus exchange programme

2017–2020 Tenders & Procurement, Ad hoc committees member.

Tendering committee for new supercomputer (1.2M EUR)

Technical evaluation committee for computer system tender (120K EUR) Computational infrastructure for Teaming and ERA-Chair projects (550K EUR)

Extension of public liability and professional indemnity insurance

2016–2019 IT Committee, Member.

Drafting policies and advising on use of IT equipment and software

2016–2019 HPC Scientific Committee, Member, High Performance Computing Facility.

Code benchmarking on new architectures and assessment for strategic plan

2016–2020 Outreach Committee, Member.

Publications, Web, Science Fair, Solar Car Race

# Teaching & Supervision

### Courses

2019 – Atmospheric Modelling (10 ECTS)

2018 – Visualisation and Advanced Data Structures (10 ECTS)

2017 Computer Graphics and Data Exploration (10 ECTS)

2014 Data Structures (10 ECTS)

Schools

2023 CLOUD-DOC Summer School

- 2016 International HPC Summer School on Challenges in Computational Sciences (Mentor)
- 2016 HPC architectures and numerical methods (Local curator, instructor), Marie Skłodowska-Curie HPC-LEAP European Joint Doctorates (5 ECTS)
- 2016 Large-scale numerical computation (Local curator, instructor), HPC-LEAP EJD (5 ECTS)
- 2015 High Performance Visualization for Large-Scale Scientific Data Analytics (Local instructor, assessor), NCSA Online course with 8 US Universities (10 ECTS)
- 2013 Advanced Scientific Visualization (Lecturer, instructor), CYI VisLab & US National Center of Scientific Applications (NCSA) Advanced Visualisation Lab

#### Supervision of PhD Students

- 2016–2020 GK Georgiou Thesis: "Air Quality Modelling over Cyprus"
  - 2019 G Ashiotis: Co-supervised Computational Sciences PhD Programme
  - 2020 K Sofokleous: Computational Sciences PhD Programme
  - 2020 A Rey-Pommier: Cotutelle with Institut Pierre Simon Laplace (IPSL), France
  - 2021 P Kiriakides: Environmental and Atmospheric Sciences PhD Programme
  - 2022- C Xenofontos: MSCA Fellow

### **Invited Talks**

- "Case studies on climate data use in the Mediterranean", Copernicus C3S Climate challenges and data-informed solutions in the Mediterranean Workshop, 25-26 October 2021
- "Datasets and applications on vector-borne diseases and climate change", Copernicus and Public Health Workshop, 15-16 September 2021
- 2020 "The Mediterranean/Marine Atmosphere", CLOUD-MOTION virtual event, September 2020
- 2019 "Air Pollution", World Environment Day, United Nations, Nicosia, Cyprus, 5 June 2019
- 2018 "Summary of scientific projections of climate change in the Eastern Mediterranean", Regional Environment and Security Workshop, House for Cooperation, Nicosia, Cyprus, 12 June 2018
- 2017 "Earth System Model Post-processing & Visualisation", Institute of Physics, Serbia, October 2017
- 2017 "Atmospheric Forecasts", Cyprus Ministry of Energy, Commerce, Industry and Tourism, 23 Ocotber 2017
- "Climate Change: Physical Science, Impacts, Mitigation & Adaptation", Climate-KIC Journey, CUT, Limassol, Cyprus, July 2017
- 2017 "Accelerating Earth System Models with GPUs", Institute for Advanced Simulation (IAS), Jülich Supercomputing Centre (JSC), Germany, May 2017
- 2017 "HPC and Big Data: The Climate Scientific Community", PRACE 2017 Spring School, Nicosia, Cyprus, 26 April 2017
- 2016 "Hardware acceleration for the EMAC model", German Aerospace Center (DLR), Munich, Germany, July 2017
- "Global risk model for the atmospheric dispersion of radionuclides by nuclear power plant accidents", 1st International Conference on Nuclear Risk (NURIS), International Nuclear Risk Assessment Group (INRAG), Vienna, Austria, May 2015
- 2014 "Insights from Modeling the Global Atmospheric Transport of Radionuclides", International Workshop on Atmospheric and Ocean Modeling, American University Beirut (AUB), Lebanon, July 2014

"Visualisation in Climate Research", National Center for Supercomputing Applications (NCSA), University of Illinois at Urbana-Champaign (UIUC), USA, January 2013

# International Media Coverage

- "Changes in Present and Future Climate Conditions and Air Quality", Eastern Mediterranean Affairs Magazine Issue 3: Climate Change and Sustainability in the Eastern Mediterranean
- 2018 "Akkuyu NPP Atmospheric Disperion Risk", Ta Nea, Greece, 14 August 2018
- Newsday, BBC World Service Commentary on the risk from radioactivity dispersion by forest fires at Chernobyl, 29 April 2015
- "Atmospheric Dispersion of Radioactivity from Nuclear Power Plant Accidents: Study Global Assessment and Case Study for the Eastern Mediterranean and Middle East", Global Research News, Canada, 30 January 2015
- "New insight on the spread of contamination from Fukushima", EU Parliament Magazine, Issue 370, 27 May 2013
- "New insight on the spread of contamination from Fukushima", Science for Environment Policy: European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol, Issue 310, 12 December 2012.

### Outreach

- 2020 Copernicus Climate Change Sevice (C3S) 4th General Assembly: ECMWF Demo Case Statement
- 2017 European Big Data Value Forum, Paris, France
- 2017 Cyta Smartcity Crowdhackathon, Invited Mentor, Marathon for the Development of Innovative Applications and Services for Local Authorities, Cyprus
- 2016 Open Data Cyprus Crowd Hackathon Invited Mentor by Dept. of Public Governance, Ministry of Economics and Administrative Reform Unit, Cyprus
- 2015 "Atmospheric Risk from Nuclear Power Plant Accidents: Global Assessment, Eastern Mediterranean, Akkuyu", European Parliament Members Visit to Cyprus, House for Cooperation, Nicosia, Cyprus, May 2015
- 2014 "Nuclear Power Plant Atmospheric Risks", Friends of the Earth NGO, Cyprus, July 2014

## Peer-Reviewed Conference Papers

- 1. Giannis Ashiotis et al. "Al for Air Quality: Leveraging Data Fusion for Deep Downscaling of Atmospheric Pollutants". In: MACLEAN: MAChine Learning for EArth Observation Workshop 2022, in conjunction with ECML/PKDD (European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases) 2022. Vol. 3343. 2022.
- 2. Theodoros Christoudias et al. "GPU Optimizations for Atmospheric Chemical Kinetics". In: The International Conference on High Performance Computing in Asia-Pacific Region. 2021, pp. 136–138.
- 3. G. Ashiotis et al. "Shared-space Autoencoders with Randomized Skip Connections for Building Footprint Detection with Missing Views". In: Proc. International Conference on Pattern Recognition (ICPR), 11th IAPR International Workshop on Pattern Recognition in Remote Sensing. 2020.
- Theodoros Christoudias and Mihalis A Nicolaou. "Machine Learning towards a Global Parameterisation of Atmospheric New Particle Formation and Growth". In: NeurIPS 2020 Workshop: Tackling Climate Change with Machine Learning. 2020.

- S Michaelides et al. "Forecasting Drought and Fire Risk in the Balkan-Med Region". In: 14th International Conference on Meteorology, Climatology and Atmospheric Physics COMECAP. 2018.
- 6. T Christoudias and M Alvanos. "Accelerated chemical kinetics in the EMAC chemistry-
- climate model". In: High Performance Computing & Simulation (HPCS), 2016 International Conference on. IEEE. 2016, pp. 886–889.
- 7. T Christoudias et al. "Visualising the dark sky IEEE SciVis contest 2015". In: 2015 IEEE Scientific Visualization Conference (SciVis). IEEE. 2015, pp. 79–86.

### Peer-Reviewed Journal Publications

- Pantelis Kiriakidis et al. "The impact of using assimilated Aeolus wind data on regional WRF-Chem dust simulations". In: Atmospheric Chemistry and Physics 23.7 (2023), pp. 4391–4417.
- 2. G. K. Georgiou et al. "Evaluation of WRF-Chem model (v3.9.1.1) real-time air quality forecasts over the Eastern Mediterranean". In: Geoscientific Model Development 15.10 (2022), pp. 4129–4146. DOI: 10 . 5194 / gmd 15 4129–2022.
- 3. Alexandra Monteiro et al. "Multi-sectoral impact assessment of an extreme African dust episode in the Eastern Mediterranean in March 2018". In: Science of The Total Environment (2022), p. 156861. ISSN: 0048-9697. DOI: https://doi.org/10.1016/j.scitotenv.2022.156861.
- 4. A. Rey-Pommier et al. "Quantifying  $NO_x$  emissions in Egypt using TROPOMI observations". In: Atmospheric Chemistry and Physics 22.17 (2022), pp. 11505–11527. DOI: 10.5194/acp-22-11505-2022.
- 5. Anwar Al Shami et al. "Updated national emission inventory and comparison with the Emissions Database for Global Atmospheric Research (EDGAR): case of Lebanon". In: Environmental Science and Pollution Research (2022), pp. 1–13.
- Kyriacos Sophocleous and Theodoros Christoudias. "Reduced-Precision Chemical Kinetics in Atmospheric Models". In: Atmosphere 13.9 (2022). ISSN: 2073-4433. DOI: 10.3390/atmos13091418.
- 7. Mingyi Wang et al. "Synergistic HNO3–H2SO4–NH3 upper tropospheric particle formation". In: Nature 605.7910 (2022), pp. 483–489. DOI: 10.1038/s41586-022-04605-4.

- 8. George K Georgiou et al. "Air quality modelling over the Eastern Mediterranean: Seasonal sensitivity to anthropogenic emissions". In: Atmospheric Environment 222 (2020), p. 117119. DOI: 10.1016/j.atmosenv.2019.117119.
- Vassiliki Kotroni et al. "DISARM Early Warning System for Wildfires in the Eastern Mediterranean". In: Sustainability 12.16 (2020), p. 6670.
- Michail Alvanos and Theodoros Christoudias. "Accelerating Atmospheric Chemical Kinetics for Climate Simulations". In: IEEE Transactions on Parallel and Distributed Systems (2019). DOI: 10.1109/TPDS.2019.2918798.
- 11. Jonilda Kushta et al. "Evaluation of EU air quality standards through modeling and the FAIR-MODE benchmarking methodology". In: Air Quality, Atmosphere & Health 12.1 (2019), pp. 73–86.
- 12. Alexander De Meij, George Zittis, and Theodoros Christoudias. "On the uncertainties introduced by land cover data in high-resolution regional simulations". In: Meteorology and Atmospheric Physics (2018), pp. 1–11.
- 13. George K Georgiou et al. "Air quality modelling in the summer over the eastern Mediterranean using WRF-Chem: chemistry and aerosol mechanism intercomparison". In: Atmospheric Chemistry and Physics 18.3 (2018), pp. 1555–1571. DOI: 10.5194 / acp 18 1555–2018.
- 14. M Alvanos and T Christoudias. "GPU-accelerated atmospheric chemical kinetics in the ECHAM/MESSy (EMAC) Earth system model (version 2.52)". In: Geoscientific Model Development 10.10 (2017), p. 3679. DOI: 10.5194/gmd-10-3679-2017.

- M Alvanos and T Christoudias. "MEDINA: MECCA Development in Accelerators—KPP Fortran to CUDA source-to-source Pre-processor". In: Journal of Open Research Software 5.1 (2017).
- 16. J Kushta et al. "Modelling study of the atmospheric composition over Cyprus". In: Atmospheric Pollution Research (2017).
- 17. Sara Bacer, T Christoudias, and Andrea Pozzer. "Projection of North Atlantic Oscillation and its effect on tracer transport". In: Atmospheric Chemistry and Physics 16.24 (2016), pp. 15581–15592. DOI: 10.5194/acp-16-15581-2016.
- 18. Michalis Christou et al. "Earth system modelling on system-level heterogeneous architectures: EMAC (version 2.42) on the Dynamical Exascale Entry Platform (DEEP)". In: Geoscientific Model Development 9.9 (2016), p. 3483. DOI: 10.5194/gmd-9-3483-2016.
- 19. NI Kristiansen et al. "Evaluation of observed and modelled aerosol lifetimes using radioactive tracers of opportunity and an ensemble of 19 global models". In: Atmospheric Chemistry and Physics 16.5 (2016), pp. 3525–3561. DOI: 10.5194/acp-16-3525-2016.
- T Christoudias, Y Proestos, and J Lelieveld. "Atmospheric Dispersion of Radioactivity from Nuclear Power Plant Accidents: Global Assessment and Case Study for the Eastern Mediterranean and Middle East". In: Energies 7.12 (2014), pp. 8338–8354.
- 21. T Christoudias, Y Proestos, and J Lelieveld. "Global risk from the atmospheric dispersion of radionuclides by nuclear power plant accidents in the coming decades". In: Atmospheric Chemistry and Physics 14.9 (2014), pp. 4607–4616. DOI: 10.5194/acp-14-4607-2014.
- 22. T Christoudias and J Lelieveld. "Modelling the global atmospheric transport and deposition of radionuclides from the Fukushima Dai-ichi nuclear accident". In: Atmospheric Chemistry and Physics 13.3 (2013), pp. 1425–1438. DOI: 10.5194/acp-13-1425-2013.

- 23. T Christoudias, A Pozzer, and J Lelieveld. "Influence of the North Atlantic Oscillation on air pollution transport". In: Atmospheric Chemistry and Physics 12.2 (2012), pp. 869–877. DOI: 10.5194/acp-12-869-2012.
- 24. VM Abazov et al. "A measurement of the ratio of inclusive cross sections  $\sigma(p\bar{p}\to Z+bjet)/\sigma(p\bar{p}\to Z+jet)$  at  $\sqrt{s}$ =1.96 TeV". In: Phys. Rev. D83 (2011), p. 031105. DOI: 10. 1103/PhysRevD.83.031105. arXiv: 1010.6203 [hep-ex].
- 25. VM Abazov et al. "Azimuthal decorrelations and multiple parton interactions in  $\gamma$ +2 jet and  $\gamma$ +3 jet events in  $p\bar{p}$  collisions at  $\sqrt{s}$ =1.96 TeV". In: Phys. Rev. D83 (2011), p. 052008. DOI: 10 . 1103 / PhysRevD . 83 . 052008. arXiv: 1101 . 1509 [hep-ex].
- 26. VM Abazov et al. "Determination of the width of the top quark". In: Phys. Rev. Lett. 106 (2011), p. 022001. DOI: 10 . 1103 / PhysRevLett . 106 . 022001. arXiv: 1009 . 5686 [hep-ex].
- 27. VM Abazov et al. "High mass exclusive diffractive dijet production in  $p\bar{p}$  collisions at  $\sqrt{s}$  = 1.96 TeV". In: Phys. Lett. B705 (2011), pp. 193–199. DOI: 10.1016/j.physletb.2011.10.013. arXiv: 1009.2444 [hep-ex].
- 28. VM Abazov et al. "Measurement of color flow in  $t\bar{t}$  events from  $p\bar{p}$  collisions at  $\sqrt{s}$ =1.96 TeV". In: Phys. Rev. D83 (2011), p. 092002. DOI: 10. 1103 / PhysRevD. 83. 092002. arXiv: 1101. 0648 [hep-ex].
- 29. VM Abazov et al. "Measurement of spin correlation in  $t\bar{t}$  production using dilepton final states". In: Phys. Lett. B702 (2011), pp. 16–23. DOI: 10.1016/j.physletb.2011.05.077. arXiv: 1103.1871 [hep-ex].
- 30. VM Abazov et al. "Measurement of the  $WZ \to \ell\nu\ell\ell$  cross section and limits on anomalous triple gauge couplings in  $p\bar{p}$  collisions at  $\sqrt{s}$  = 1.96 TeV". In: Phys. Lett. B695 (2011), pp. 67–73. DOI: 10 . 1016 / j . physletb.2010.10.047. arXiv: 1006.0761 [hep-ex].

- 31. VM Abazov et al. "Measurement of the top quark pair production cross section in the lepton+jets channel in proton-antiproton collisions at  $\sqrt{s}$ =1.96 TeV". In: Phys. Rev. D84 (2011), p. 012008. DOI: 10.1103/PhysRevD. 84.012008. arXiv: 1101.0124 [hep-ex].
- 32. VM Abazov et al. "Measurement of the W boson helicity in top quark decays using 5.4 fb $^{-1}$  of  $p\bar{p}$  collision data". In: Phys. Rev. D83 (2011), p. 032009. DOI: 10 . 1103 / PhysRevD . 83 . 032009. arXiv: 1011.6549 [hep-ex].
- 33. VM Abazov et al. "Precise study of the  $Z/\gamma^*$  boson transverse momentum distribution in  $p\bar{p}$  collisions using a novel technique". In: Phys. Rev. Lett. 106 (2011), p. 122001. DOI: 10 . 1103 / PhysRevLett . 106 . 122001. arXiv: 1010.0262 [hep-ex].
- 34. VM Abazov et al. "Search for  $W' \rightarrow tb$  resonances with left- and right-handed couplings to fermions". In: Phys. Lett. B699 (2011), pp. 145–150. DOI: 10 . 1016 / j . physletb . 2011.03.066. arXiv: 1101.0806 [hep-ex].
- 35. VM Abazov et al. "Search for WH associated production in 5.3 fb $^{-1}$  of  $p\bar{p}$  collisions at the Fermilab Tevatron". In: Phys. Lett. B698 (2011), pp. 6–13. DOI: 10.1016/j.physletb.2011. 02.036. arXiv: 1012.0874 [hep-ex].
- 36. VM Abazov et al. "Search for a heavy neutral gauge boson in the dielectron channel with 5.4 fb $^{-1}$  of  $p\bar{p}$  collisions at  $\sqrt(s)$  = 1.96 TeV". In: Phys. Lett. B695 (2011), pp. 88–94. DOI: 10 . 1016/j.physletb.2010.10.059. arXiv: 1008.2023 [hep-ex].
- 37. VM Abazov et al. "Search for flavor changing neutral currents in decays of top quarks". In: Phys. Lett. B701 (2011), pp. 313–320. DOI: 10. 1016/j.physletb.2011.06.014. arXiv: 1103.4574 [hep-ex].
- 38. VM Abazov et al. "Search for neutral Higgs bosons in the multi-b-jet topology in  $5.2 {\rm fb}^{-1}$  of  $p\bar{p}$  collisions at  $\sqrt{s}=1.96$  TeV". In: Phys. Lett. B698 (2011), pp. 97–104. DOI: 10.1016/j.physletb.2011.02.062. arXiv: 1011.1931 [hep-ex].

- 39. VM Abazov et al. "Search for pair production of the scalar top quark in the electron+muon final state". In: Phys. Lett. B696 (2011), pp. 321–327. DOI: 10.1016/j.physletb.2010.12.052.arXiv: 1009.5950 [hep-ex].
- 40. VM Abazov et al. "Search for resonant WW and WZ production in  $p\bar{p}$  collisions at  $\sqrt{s}$  = 1.96 TeV". In: Phys. Rev. Lett. 107 (2011), p. 011801. DOI: 10.1103/PhysRevLett.107.011801. arXiv: 1011.6278 [hep-ex].
- 41. VM Abazov et al. "Search for single vector-like quarks in  $p\bar{p}$  collisions at  $\sqrt(s)$  = 1.96 TeV". In: Phys. Rev. Lett. 106 (2011), p. 081801. DOI: 10. 1103 / PhysRevLett . 106 . 081801. arXiv: 1010.1466 [hep-ex].
- 42. VM Abazov et al. "Search for the Standard Model Higgs Boson in the  $H \to WW \to \ell \nu q' \bar{q}$  Decay Channel". In: Phys. Rev. Lett. 106 (2011), p. 171802. DOI: 10 . 1103 / PhysRevLett . 106 . 171802. arXiv: 1101 . 6079 [hep-ex].
- 43. T Aaltonen et al. "Combination of Tevatron searches for the standard model Higgs boson in the W+W- decay mode". In: Phys. Rev. Lett. 104 (2010), p. 061802. DOI: 10 . 1103 / PhysRevLett . 104 . 061802. arXiv: 1001 . 4162 [hep-ex].
- 44. T Aaltonen et al. "Combined Tevatron upper limit on  $gg \to H \to W^+W^-$  and constraints on the Higgs boson mass in fourth-generation fermion models". In: Phys. Rev. D82 (2010), p. 011102. DOI: 10 . 1103 / PhysRevD . 82 . 011102. arXiv: 1005 . 3216 [hep-ex] .
- 45. VM Abazov et al. "b-Jet Identification in the D0 Experiment". In: Nucl. Instrum. Meth. A620 (2010), pp. 490–517. DOI: 10.1016/j.nima. 2010.03.118. arXiv: 1002.4224 [hep-ex].
- 46. VM Abazov et al. "Dependence of the  $t\bar{t}$  production cross section on the transverse momentum of the top quark". In: Phys. Lett. B693 (2010), pp. 515–521. DOI: 10 . 1016 / j . physletb.2010.09.011. arXiv: 1001.1900 [hep-ex].
- 47. VM Abazov et al. "Double parton interactions in  $\gamma$ +3 jet events in  $pp^-$  bar collisions  $\sqrt{s}=1.96$  TeV". In: Phys. Rev. D81 (2010), p. 052012.

- DOI: 10.1103/PhysRevD.81.052012. arXiv: 0912.5104 [hep-ex].
- 48. VM Abazov et al. "Evidence for an anomalous like-sign dimuon charge asymmetry". In: Phys. Rev. Lett. 105 (2010), p. 081801. DOI: 10. 1103 / PhysRevLett . 105 . 081801. arXiv: 1007.0395 [hep-ex].
- 49. VM Abazov et al. "Evidence for an anomalous like-sign dimuon charge asymmetry". In: Phys. Rev. D82 (2010), p. 032001. DOI: 10 . 1103 / PhysRevD . 82 . 032001. arXiv: 1005 . 2757 [hep-ex].
- 50. VM Abazov et al. "Measurement of  $t\bar{t}$  production in the tau + jets topology using  $p\bar{p}$  collisions at  $\sqrt{s}$  = 1.96 TeV". In: Phys. Rev. D82 (2010), p. 071102. DOI: 10.1103/PhysRevD. 82.071102. arXiv: 1008.4284 [hep-ex].
- 51. VM Abazov et al. "Measurement of direct photon pair production cross sections in  $p\bar{p}$  collisions at  $\sqrt{s}=1.96$  TeV". In: Phys. Lett. B690 (2010), pp. 108–117. DOI: 10.1016/j. physletb.2010.05.017. arXiv: 1002.4917 [hep-ex].
- 52. VM Abazov et al. "Measurement of the  $t\bar{t}$  cross section using high-multiplicity jet events". In: Phys. Rev. D82 (2010), p. 032002. DOI: 10. 1103/PhysRevD.82.032002. arXiv: 0911.4286 [hep-ex].
- 53. VM Abazov et al. "Measurement of the dijet invariant mass cross section in  $p\bar{p}$  collisions at  $\sqrt{s}=1.96$  TeV". In: Phys. Lett. B693 (2010), pp. 531–538. DOI: 10 . 1016 / j . physletb . 2010 . 09 . 013 . arXiv: 1002 . 4594 [hep-ex] .
- 54. VM Abazov et al. "Measurement of the normalized  $Z/\gamma^*->\mu^+\mu^-$  transverse momentum distribution in  $p\bar{p}$  collisions at  $\sqrt{s}=1.96$  TeV". In: Phys. Lett. B693 (2010), pp. 522–530. DOI: 10.1016/j.physletb.2010.09.012. arXiv: 1006.0618 [hep-ex].
- 55. VM Abazov et al. "Measurement of the t-channel single top quark production cross section". In: Phys. Lett. B682 (2010), pp. 363–369. DOI: 10.1016/j.physletb.2009.11.038. arXiv: 0907.4259 [hep-ex].

- 56. VM Abazov et al. "Measurement of Z/gamma\*+jet+X angular distributions in p anti-p collisions at  $s^{1/2}$  = 1.96.TeV". In: Phys. Lett. B682 (2010), pp. 370–380. DOI: 10 . 1016/j.physletb.2009.11.012. arXiv: 0907.4286 [hep-ex].
- 57. VM Abazov et al. "Search for  $ZH \to \ell^+\ell^-b\bar{b}$  production in  $4.2~{\rm fb}^{-1}$  of  $p\bar{p}$  collisions at  $\sqrt{s}=1.96~{\rm TeV}$ ". In: Phys. Rev. Lett. 105 (2010), p. 251801. DOI: 10 . 1103 / PhysRevLett . 105.251801. arXiv: 1008.3564 [hep-ex].
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