Melahat Bilge Demirköz

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Associate Professor at Middle East Technical University, Ankara
Member of the Science Board of TÜBİTAK, Ankara

CAREER

- June 2015 Elected as an Associate Member of the Turkish Academy of Sciences for 3 years, TÜBA
- May 2015 Appointed as the first representative of Turkey to the Advisory Committee on CERN Users (ACCU) when Turkey became an Associate Member of CERN
- October 2014 Appointed as Advisor to the Ministry of Energy
- March 2014 Appointed as the Middle East representative to the Advisory Committee on CERN Users (ACCU)
- February 2014 Appointed to the Board of arts@CERN program
- May 2013-May 2014 Senior Advisor at TÜBİTAK Uzay, Space Technologies Research Institute of TÜBİTAK
- June 2012 Elected as an Associate Member of the Turkish Academy of Sciences for 3 years, TÜBA
- February 2012 Promoted to Associate Professor with tenure, METU
- February 2011 Appointed Associate Professor without tenure, METU

EDUCATION

- April 2010 Doçent in Physics, associate professor title awarded by the UAK, the Turkish Inter-university board
    - A title obtained after a 2-tier examination, first of publications and second orally about research.
- 2004-2007 **D.Phil. in Physics, Oxford University**, UK
    - PPARC Dorothy Hodgkin Scholar
    - Thesis: Construction and Performance of the ATLAS SCT Barrels and Cosmic Tests. Supervisor: Dr. Antony Weidberg.
- 2001-2004 **M.S. in Physics, M.I.T.,** Cambridge, MA, USA
    - Thesis: A Transition Radiation Detector and Gas Supply System for AMS. Supervisor: Prof. Ulrich Becker.
- 1997-2001 **B.S. in Physics, M.I.T.,** Cambridge, MA, USA
    - With minors in Mathematics and Music.

- Thesis: Studies of Transition Radiation Detectors for AMS. Supervisor: Prof. Ulrich Becker.
- 1990-1997 High School, Robert College of Istanbul, Turkey

RESEARCH

- 02/2011-onwards **Associate Professor at METU**
  - May 2015: Promotion procedure to Full Professor started
  - 2013-onwards: Working towards the construction of the first radiation environment test facility for space industry and particle physics in SANAEM (Saraykoy Nuclear Research and Training Center) in Turkey. Project proposal submitted in February 2013 and accepted in July 2015.
  - 2013-onwards: Ongoing project with ASELSAN on the TID (Total Ionizing Dose) tests of newly developed power amplifiers for space use.
  - 2012-onwards: Analysis of the proton and positron cosmic-ray flux as collected by the Alpha Magnetic Spectrometer for a search of dark matter annihilation signal in the galactic halo. First paper very high profile in PRL in April 2013. Continuing work on the photon flux measurement from the galactic halo as well as understanding the effect of the Solar wind on the low energy proton spectrum.
  - 2011: Analysis of inclusive jet cross-section with the ATLAS detector

- 12/2009-02/2011 **Post-doctoral Researcher at IFAE** (Institut de Fisica d'Altes Energies) Barcelona
  - Analysis of jet shapes and energy flows with 900GeV and 7TeV data taken with the ATLAS detector. Studies of the jet trigger efficiencies for the inclusive jet cross section measurement. Studies of jet shapes in Z+jets events toward a Higgs search study.

- 07/2009-11/2009 **Visiting Researcher at Cambridge University, UK**
  - Worked with the ATLAS Semi-Conductor Tracker offline group on developing analysis framework for the SCT offline calibration and optimizing of the analysis for running on the CERN Analysis Facility for the 24-hour calibration loop.

- 05/2007-06/2009 **CERN Research Fellow**
  - After a few months in the trigger group, was appointed as "ATLAS Trigger Expert" in charge of a consistent reliable trigger menu with reasonable rate for physics studies and searches. To achieve this, performed rate calculations for physics channels towards fitting them into the allocated bandwidth. Worked with all trigger slices to integrate them into trigger menus for startup up to high luminosity runs. While working on Level-1 trigger simulation (BCM, LUCID, ZDC) and high-level trigger optimization, also ran shift leader and trigger shifts. Worked on leptonjet exotic physics searches with a goal to trigger on them efficiently.

- 09/2004-04/2007 **Graduate student, Oxford University**
  - During PhD, helped assemble the ATLAS Semi-Conductor Tracker (SCT) barrels. This involved mounting 2000 modules and testing. Developed software to speed up the tests and catch any faults. Solved many problems by careful investigations and developing a deep understanding of the detector and readout system. There was a tight schedule and worked under constant pressure to deliver the SCT on time, with all modules working. Moved to CERN with the barrels in September 2005. Worked on preparing the cosmics trigger chain, timing in of the SCT, databases for detector conditions and the common readout of the SCT and the TRT (Transition Radiation Tracker). For thesis, made an analysis of the first $5x10^5$ cosmics data set with emphasis on SCT efficiencies, timing and tracking performance.

- 06/2001-06/2004 **Graduate student, MIT**
  - During Master's degree, worked on construction of the Transition Radiation Detector (TRD) gas supply system of the Alpha Magnetic Spectrometer (AMS-02). Wrote control software for the gas supply system and tested components according to NASA rules for flight. Reported to the AMS collaboration at meetings several times. Physics studies of the dark matter signal in the positron spectrum using the TRD e+/p separation.

- 02/2002-09/2002 Visiting graduate student from MIT at CERN
  - Construction of a gas supply system for AMS TRD.

- 06/2000-06/2001 Undergraduate researcher, MIT
  - Optimization of the TRD for AMS, by measuring X-ray properties of materials used in the TRD.

- 06/1998-05/2000 Undergraduate researcher, Medium Energy Group, MIT
  - Studies of pion electro-production at Bates and Jefferson labs

- 05/1999-08/1999 Visiting student, Mainz, Germany
  - Studies of pion electro-production at the Mainz Microtron

PROJECTS as Principal Investigator

- Ministry of Development R&D Project "Construction of an Irradiation Facility for Space Environment and Development of Space Qualification Tests", accepted in July 2015 with a budget: 5.5M TL. Started in September 2015
- SANTEZ Project: "Total Ionizing Dose Tests of Power Amplifier Modules" with ASELSAN, Budget: 465k TL, December 2014-August 2016
- DPT-OYP Education Project: "Advanced Laboratory in Nuclear Physics, Budget: 270k TL, January 2014 – January 2015
- TAEK (Turkish Atomic Energy Agency) Research Project: "Search for a Dark Matter and Anti-Matter Signal with AMS-02 and Measurement of Cosmic Fluxes" Budget: 500k TL, October 2012 – April 2016

- 7th Framework Marie Curie CIG (Career Integration Grant): "Search for a Dark Matter Signal with the Alpha Magnetic Spectrometer", Budget: 100k euros, March 2012 - March 2016
- METU Internal BAP Grant: "Study of Particle Detectors R&D", Budget: 20k TL, July 2011-July 2012

ACADEMIC

- Governing Board of the METU Science and Society Center, January 2014-onwards
- Responsible for bringing "Accelerating Science", CERN's traveling exhibition, to METU, Ankara, January-July 2012. Visited by 36000 people.
- 06/2011-12/2011 Advisor to YÖK (Higher Education Council of Turkey) on "111 scientists" program, which aims to bring high-profile researchers to Turkey.

ADVISED THESES

- Cenk Türkoğlu, "Calorimetric Mode Photon Analysis using the Alpha Magnetic Spectrometer (AMS-02)," Master's thesis, METU, February 2015
- Emirhan Postacı, "Conversion Mode Photon Analysis using the Alpha Magnetic Spectrometer(AMS-02)", Master's thesis, METU, August 2014
- Dilek Kızılören, "Design of an Irradiation Facility for Space Applications", Master's thesis, METU, February 2015

THESES IN PROGRESS

- Merve Yiğitoğlu, Master's Thesis, Defocusing Beam Line (DBL) Design for an Irradiation Test Facility by Using G4Beamline Simulation
- Çağlar Konak, Master's Thesis, Measurement of the Proton Flux and Variability in Low Earth Orbit with the Alpha Magnetic Spectrometer
- Ayşenur Gencer, PhD Thesis, Setting up a De-focusing Beam Line (DBL) for the Space Radiation Tests at the TAEK SANAEM Proton Accelerator Facility
- Ramazan Uzel, PhD Thesis, Reliability Tests of Radiation Effects in Space Applications
- Muhteşem Akif Korkmaz, PhD Thesis, Investigation of Dark Matter Traces using the Alpha Magnetic Spectrometer (AMS-02)

AWARDS and DISTINCTIONS

- METU Development Foundation, Young Researcher Award, April 2015
- Engin Arık Physicist of the Year Award by Turkish Physical Society, Bodrum, Turkey, July 2014
- Award for scientific excellence, presented by H.E. Recep Tayyip Erdoğan, Prime Minister of Turkey on the occasion of International Women's Day, selected by the Ministry of Family and Social Policies, Siirt, 8th March 2013
- TOYP (Ten Outstanding Young Persons) award in Scientific Leadership category by JCI Turkey, Istanbul, November 2012

- TEDGlobal 2011 fellow, attended the TED Global 2011 conference and gave a TEDfellow talk, entitled “The Dark Age of Physics” in Edinburgh, Scotland, July 8-15th, 2011
- Invited to the 59th meeting of the Nobel Laureates in Lindau, for initiating and facilitating Turkish partnership in the Lindau dialogue. 9th person ever to be invited back to Lindau in its 58 year history, besides the Laureates.
- Şevket Erk Young Physicist of the Year Award by Turkish Physical Society, Bodrum, Turkey, August 2008.
- Represented CERN at the 58th Meeting of the Nobel Laureates in Lindau, Germany, July 2008.
- “Best Contribution by a Young Researcher” award at the 10th Pisa meeting on Advanced Detectors, Elba, Italy, May 2006
- Scottish Power and PPARC Dorothy Hodgkin Postgraduate award for “outstanding international student”, 2004
- Selected as a “Young Scientist” to carry the Olympic Torch in the Istanbul leg of the Olympic Torch Relay, June 2004
- Orloff Award for “outstanding service to the physics community”, at MIT graduation, June 2001
- President of the Society of Physics Students at MIT, 2000
- President of the Turkish Students Association at MIT, 1999
- Hikmet Nuri Anter award for “Excellence in Mathematics and Sciences", at high school graduation, 1997
- Key Curriculum Press, “Key Innovator Award” for original mathematical work using Geometer’s Sketchpad, 1997
- 3rd place as a team in the European Council of International Schools (ECIS) Seniors Mathematics Competition, Ankara, 1997
- “Best Mathematics Research Award” in the TÜBITAK (The Scientific and Technological Research Council of Turkey) High School Research Project competition, 1996
- Certificate of Distinction, American Mathematics Competitions, 1996
- 1st place as a team in the European Council of International Schools (ECIS) Juniors Mathematics Competition, Geneva, 1995

SELECTION BOARDS AND JURIES

- Selection board for CERN Summer Students Programme, 2015, 2016
- Jury member for the CERN Summer Student Webfest, 2015
- Selection board for the TUBITAK Awards 2015
- Selection board for the TUBA GEBIP Awards 2015
- Selection board for the arts@CERN Greek fellowship with Onassis Foundation 2015
- Jury member for the CERN Summer Student Webfest, 2014
- Selection board for the Prof. Dr. Dr. hc. Onder Oztunali Science Award 2013
- Ministry of Transport, Maritime Affairs and Communications project review board for R&D in aerospace applications, 2012

LIST OF PUBLICATIONS

Only selected papers are listed here.
A full list is available at **ResearcherID: C-8179-2014**

- Aguilar, M., et al. (2015). "Precision Measurement of the Helium Flux in Primary Cosmic Rays of Rigidities 1.9 GV to 3 TV with the Alpha Magnetic Spectrometer on the International Space Station" Physical Review Letters 115:211101.
- A. Gencer, B. Demirköz, I. Efthymiopoulos, M. Yigitoglu, "Defocusing beam line designfor an irradiation facility at the TAEA SANAEM Proton Accelerator Facility", Nucl. Instrum. Meth. A 2015.11.018
- Aguilar, M., et al. (2015). "Precision Measurement of the Proton Flux in Primary Cosmic Rays from Rigidity 1 GV to 1.8 TV with the Alpha Magnetic Spectrometer on the International Space Station." Physical review letters, 114(17), 171103.
- Aguilar, M., et al. (2014). "Electron and Positron Fluxes in Primary Cosmic Rays Measured with the Alpha Magnetic Spectrometer on the International Space Station." Physical review letters 113(12).
- Aguilar, M., et al. (2014). "Precision Measurement of the (e++ e–) Flux in Primary Cosmic Rays from 0.5 GeV to 1 TeV with the Alpha Magnetic Spectrometer on the International Space Station." Physical review letters 113(22): 221102.
- Accardo, L., et al. (2014). "High Statistics Measurement of the Positron Fraction in Primary Cosmic Rays of 0.5-500 GeV with the Alpha Magnetic Spectrometer on the International Space Station." Physical review letters 113(12).
- M. Aguilar et al., "First Result from the Alpha Magnetic Spectrometer on the International Space Station: Precision Measurement", Phys.Rev.Lett. 110, 141102, 2013
- B. Demirkoz et al., "Proposal for an Irradiation Facility at the TAEK SANAEM Proton Accelerator Facility", Nucl. Instrum. Meth. 730, 232, 2013
- Aad, G., et al. "Measurement of jet shapes in top-quark pair events at root s=7 TeV using the ATLAS detector." European Physical Journal C 73, (2013) 12.
- G. Aad, et al., "Search for the Standard Model Higgs boson in the two photon decay channel with the ATLAS detector at the LHC", Physics Letters B 716(1): 1-29.

The following publications are older than three years. ***Multi-author publications where I had a major contribution to are marked with ****

- G. Aad, et al., "Properties of jets measured from tracks in proton-proton collisions at center-of-mass energy √s=7 TeV with the ATLAS detector", Phys. Rev. D 84, 054001 (2011)
- G. Aad, et al., "Measurement of dijet production with a veto on additional central jet activity in pp collisions at √s=7 TeV using the ATLAS detector"", JHEP 09 (2011) 053
- G. Aad, et al., "Search for Heavy Long-Lived Charged Particles with the ATLAS detector in pp collisions at √s = 7 TeV", Phys. Lett. B 703 (2011) 428-446
- G. Aad, et al., "Measurement of the Inelastic Proton-Proton Cross-Section at

√s=7 TeV with the ATLAS Detector", Nature Comm. 2 (2011) 463 ***
- G. Aad, et al., "Search for New Physics in Dijet Mass and Angular Distributions in pp Collisions at sqrt(s) = 7 TeV Measured with the ATLAS Detector", New J. Phys. 13 (2011) 053044 ***
- G. Aad, et al., "Measurements of underlying event properties using neutral and charged particles in p-p collisions at 900 GeV and 7 TeV with the ATLAS detector at the LHC", EPJC 71 (2011) 1636
- G. Aad, et al., "Luminosity Determination in pp Collisions at √(s)=7 TeV Using the ATLAS Detector at the LHC", EPJC 71 (2011) , 1630
- G. Aad, et al., "Study of Jet Shapes in Inclusive Jet Production in pp Collisions at √s = 7 TeV using the ATLAS Detector", Phys. Rev. D 83, 052003 (2011) ***
- G. Aad, et al., "Charged-particle multiplicities in pp interactions measured with the ATLAS detector at the LHC", New J Phys 13 (2011) 053033
- G. Aad, et al., "Measurement of the inclusive isolated prompt photon cross section in pp collisions at √s = 7 TeV with the ATLAS detector", Phys. Rev. D 83, 052005 (2011)
- G. Aad, et al., "Measurement of underlying event characteristics using charged particles in pp collisions at √s = 900 GeV and 7 TeV with the ATLAS detector", Phys. Rev. D 83, 112001 (2011)
- Aad, G. et al., Studies of the performance of the ATLAS detector using cosmic-ray muons, EPJC 71 (2011) 1593, ***
- Aad, G. et al., Observation of a centrality-dependent dijet asymmetry in lead-lead collisions at $\sqrt{s_{NN}}$ = 2.76 TeV with the ATLAS detector at the LHC, Phys. Rev. Lett. 105, 252303
- Aad, G. et al., Measurement of inclusive jet and dijet cross sections in proton-proton collisions at 7 TeV centre-of-mass energy with the ATLAS detector, EPJC 71 (2011) 1-59 ***
- Aad, G. et al., Search for New Particles in Two-Jet Final States in 7 TeV Proton-Proton Collisions with the ATLAS Detector at the LHC, Phys. Rev. Lett. 105, 161801
- Aad, G. et al., Readiness of the ATLAS tile calorimeter for LHC collisions, EPJC, DOI: 10.1140/epjc/s10052-010-1354-y
- Aad, G. et al., “Commissioning of the ATLAS Muon Spectrometer with Cosmic Rays”, EPJC 70 (2010) 875
- Aad, G. et al., “Performance of the ATLAS Detector using First Collision Data”, JHEP 1009:056,2010 ***
- Aad, G. et al., “The ATLAS Simulation Infrastructure”, Eur. Phys. J. C. DOI: 10.1140/epjc/s10052-010-1429-9,arXiv:1005.4568
- Aad, G. et al., “The ATLAS Inner Detector commissioning and calibration”, EPJC DOI: 10.1140/epjc/s10052-010-1366-7 ***
- Aad, G. et al., ”Charged-particle multiplicities in pp interactions at sqrt(s) = 900 GeV measured with the ATLAS detector at the LHC.” Phys.Lett.B688: 21-42,2010. ***
- Aad, G. et al., “Drift Time Measurement in the ATLAS Liquid Argon Electromagnetic Calorimeter using Cosmic Muons”, EPJC 70 (2010) 755
- Igonkina, O. et al., “Calorimetry Triggering in ATLAS”, J.Phys.Conf.Ser.160: 012061, 2009. ***
- Aad, G. et al., “Expected Performance of the ATLAS Experiment”, book available

at CERN-OPEN-2008-020, arxiv:0901.0512 ***

- Dufour, M.A. and Demirkoz, B. et al., "ATLAS Trigger Menu for Early Data-Taking", Proceedings of Physics In Collision, SLAC econf/C080625, p 381-385, 2008 ***
- Abdesselam, A. et al., "The integration and engineering of the ATLAS SemiConductor Tracker barrel", JINST 3:P10006, 2008 ***
- Aad, G. et al., "The ATLAS Experiment at the CERN Large Hadron Collider", JINST 3:S08003, 2008
- Abat, E. et al., "Combined Performance tests before installation of the ATLAS Semiconductor and Transition Radiation Tracking Detectors", JINST 3:P08003, 2008 ***
- Martin, T.F. et al., "Event reconstruction algorithms for ATLAS trigger", Proceedings of the International Conference on Computing in High Energy and Nuclear Physics, J. Phys.: Conf. Ser. 119: 022022, 2008 ***
- Abolins, M. et al., "Integration of the trigger and data acquisition systems in ATLAS", Proceedings of the International Conference on Computing in High Energy and Nuclear Physics, J. Phys : Conf. Ser. 119: 022001, 2008
- Abolins, M. et al., "The ATLAS Trigger – Commissioning with cosmic rays", Proceedings of the International Conference on Computing in High Energy and Nuclear Physics, J. Phys : Conf. Ser. 119: 022014, 2008 ***
- Abdesselam, A. et al., "The Data Acquisition and Calibration System for the ATLAS Semiconductor Tracker", JINST 3:P01003, 2008 ***
- Demirkoz, B., "Cosmics tests of the ATLAS SemiConductor Tracker Barrels", American Institute of Physics conference proceedings, Volume 899, p.193-194, 2007
- Abdesselam, A. et al, "The Optical links of the ATLAS SemiConductor tracker ", JINST 2:P09003, 2007
- Ahmad, A. et al, "The Silicon microstrips of the ATLAS semiconductor tracker", Nucl. Instrum. Meth. A 578:98-118, 2007 ***
- Demirkoz, B., "Cosmic tests and performance of the ATLAS SemiConductor Tracker Barrels," Nucl. Instrum. Meth. A 572:43-47, 2007
- Demirkoz, B., "Construction and Performance of the ATLAS Semi-Conductor Tracker Barrels", Hadron Collider Physics 2005 Proceedings, 108th Springer Proceedings in Physics, 2006, p. 338-399
- Abdesselam, A. et al, "The Barrel Modules of the ATLAS SemiConductor Tracker", Nucl. Instrum. Meth., A568:642-671, 2006 ***
- Demirkoz, B., "AMS: A Particle Detector in Space", Frascati Physics Series, "Rome/Frascati 2004, Physics and astrophysics in space," p.43-50
- Aguilar, M. et al., "A Study of Cosmic Ray Secondaries Induced by the MIR Space Station Using AMS-01", Nucl. Instrum. Meth. B 234:321-332, 2005
- Demirkoz, B., "Slow Control for the TRD Gas Supply System of AMS-02", SpacePart 2003 proceedings, Nucl. Phys. Proc. Suppl.134:66-68, 2004
- Schwering, G., et al., "The transition radiation detector for AMS-2 experiment", Proceedings of the 7th International Conference on Advanced Technologies and Particle Physics, Como, Italy, World Scientific, 2001, p.57-61
- Demirkoz, B., "N Noktada Uzaklik Toplamlari ve Egriler Ailesi", (Sum of distances from N-point and a family of curves) Matematik Dunyasi, June1997 (Mathematics article in Turkish journal)

ATLAS INTERNAL NOTES

- Demirköz, B. et al., “Multi-jets and the internal structure of jets measurements at ATLAS”, ATL-COM-PHYS-2011-641, CERN, 2011
- Begel, M. et al., Jet energy scale and its systematic uncertainty in proton-proton collisions at sqrt(s)=7 TeV in ATLAS 2010 data, ATLAS-COM-CONF-2011-053, CERN, 2011, 27p.
- Davygora, Y. et al., “In-situ pseudorapidity intercalibration for evaluation of jet energy scale uncertainty using dijet events in proton-proton collisions at sqrt(s)=7 TeV”, ATLAS-COM-CONF-2011-029, CERN, 2011, 9p.
- Davygora, Y. et al., “In-situ pseudorapidity intercalibration for evaluation of jet energy scale uncertainty”, ATL-COM-PHYS-2011-110, 2011, 12p.
- Demirköz, B. et al., “Measurement of inclusive jet and dijet cross sections in proton-proton collisions at 7 TeV centre-of-mass energy with the ATLAS detector”, ATL-COM-PHYS-2010-819, Geneva, CERN, 2010, 91 p.
- Demirköz, B., Martinez, M., Vives, F., “First Measurements of Jet Shapes in proton-proton collisions at 7 TeV centre-of-mass energy with the ATLAS Detector”, ATL-COM-PHYS-2010-561, Geneva, CERN, 2010, 34p.
- Demirköz, B., Martinez, M., Meoni, E., “Measurement of Level1 Jet Trigger Efficiencies in ATLAS using pp Minimum Bias data at sqrt(s)=7TeV”, ATL-COM-DAQ-2010-114, Geneva, CERN, 2010, 20p.
- Demirköz, B., Martinez, M., Vives, F., "First Measurements on Jet Shapes and Energy Flows around Jets in ATLAS using pp Minimum Bias data at sqrt(s) = 900 GeV", ATL-PHYS-INT-2010-048, Geneva, CERN, 2010, 21 p.
- Demirköz, B. , Martinez, M., Meoni, E., Vives, F., "Measurement of Level1 Jet Trigger Efficiencies in ATLAS using pp Minimum Bias data at sqrt(s)=900 GeV and 2.36 TeV", ATL-DAQ-INT-2010-007, Geneva, CERN, 2010, 11 p.
- Cadabeschi, M.; Cindro, V., Demirköz, B., et al., "Commissioning and First operation of the pCVD diamond ATLAS Beam Conditions Monitor", ATL-COM-INDET-2010-032, Geneva, CERN, 2009, 3 p.
- Dufour, M-A., Vachon, B., Demirköz, B., "Trigger rates calculation for ATLAS and the TriggerRateTools package", ATL-DAQ-INT-2009-002, Geneva, CERN, 2009, 21 p.

ATLAS CONFERENCE NOTES: Public Results to be presented at conferences

A list of only those with major contributions

- In-situ pseudorapidity intercalibration for evaluation of jet energy scale uncertainty using dijet events in proton-proton collisions at sqrt(s)=7 TeV, ATLAS-CONF-2011-014, 10 March 2011
- Muon Detection Based on a Hadronic Calorimeter, ATL-DAQ-PROC-2010-050, 21 November 2010
- Performance of the ATLAS Jet Trigger in the Early sqrt{s}=7 TeV Data, ATLAS-CONF-2010-094, 24 September 2010
- In-situ pseudo-rapidity inter-calibration to evaluate jet energy scale uncertainty and calorimeter performance in the forward region, ATLAS-CONF-2010-055, 19 July 2010
- Properties of Jets and Inputs to Jet Reconstruction and Calibration with the ATLAS Detector Using Proton-Proton Collisions at √s=7 TeV, ATLAS-CONF-

2010-053, 17 July 2010
- Measurement of jet production in proton-proton collisions at 7 TeV centre-of-mass energy with the ATLAS Detector, ATLAS-CONF-2010-050, 16 July 2010
- Observation of Energetic Jets in pp Collisions at sqrt(s) = 7 TeV using the ATLAS Experiment at the LHC, ATLAS-CONF-2010-043, 31 May 2010
- Performance of the ATLAS jet trigger with pp collisions at sqrt(s)=900GeV, ATLAS-CONF-2010-028 , 17 May 2010
- Properties and internal structure of jets produced in proton-proton collisions at sqrt{s}=900GeV, ATLAS-CONF-2010-018, 16 April 2010

CONFERENCE PRESENTATIONS

- "AMS-02 Experiment on the International Space Station", 30th Turkish Physics Society International Congress, İstanbul, 2 September 2013
- "AMS-02 and Dark Matter", 10. International Balkan Physical Union Student Conference, Istanbul, 3 September 2013
- "Proposal for an Irradiation Facility at the TAEK SANAEM Proton Accelerator Facility", talk at the 9th International Conference on Radiation Effects on Semiconductor Materials and Devices, October 2012, Florence, Italy
- "ATLAS and CMS results on SUSY", talk at the 7th Patras Workshop on Axions, WIMPs and WISPS, June 2011, Mykonos, Greece
- "Multijet production and measurement of the internal jet structure at ATLAS", talk at the Physics at the LHC Conference, June 2011, Perugia, Italy
- "Computing Challenges at the Large Hadron Collider (LHC) at CERN", invited talk at the 7th International Conference of Computational Methods in Science and Engineering, October 2009, Rhodos, Greece
- "Commissioning of the ATLAS Detector", talk presented at Lake Louise Winter Institute, February 2009, Canada
- "The ATLAS Trigger System Commissioning And Operation During Early Data Taking", Invited talk present at the 25th Congress of Turkish Physics, August 2008, Bodrum, Turkey
- "ATLAS Trigger Menu for Early Data Taking", poster with M-A. Dufour and T. Kono, presented at Physics in Collision, June 2008, Perugia, Italy
- "Cosmics tests of the ATLAS SemiConductor Tracker Barrels", talk presented at the 6th meeting of the Balkan Physical Union, August 2006, Istanbul, Turkey
- "Cosmic tests and performance of the ATLAS SemiConductor Tracker Barrels", talk presented at the 10th Pisa Meeting on Advanced Detectors, May 2006, Elba, Italy
- "Construction and performance of the ATLAS SemiConductor Tracker Barrels", poster presented at the Hadron Collider Physics Symposium, July 2005, Les Diablerets, Switzerland
- "AMS: a particle physics experiment in space", invited talk at Frontier Science, June 2004, Frascati, Italy
- "The AMS TRD", talk presented at APS April meeting 2004, Denver, Colorado
- "A Slow Control System for the Transition Radiation Detector Gas Supply System of AMS", poster presented at SpacePart 2003, Washington DC
- "Absorption Measurement to quantify e+/p separation by a TRD", talk presented

at DPF 2002, Williamsburg, Virginia

POPULAR SCIENCE ARTICLES

- Updates about the LHC and LHC physics in Bilim ve Teknik (the leading popular science journal in Turkey) since December 2009.
- "Süpernovalar: Yıldız Patlamaları", Supernovas: Stellar Explosions, Bilim ve Teknik, January 2013, p. 32-36.
- "Büyük Patlamalanın Çınlaması", The Echo of the Big Bang, Bilim ve Teknik, February 2011, p.22-29.
- "Karşı-madde: Evrende Pek Varolmayan İkizimiz", Antimatter, our not so abundant cousin, Bilim ve Teknik, June 2010, p. 32-35.
- "Büyük Deney Düzenekleri", Large Experiments, Bilim ve Teknik, April 2010, 28-37.
- Guest editor for the April issue of Bilim ve Teknik, which was dedicated to the LHC.
- "Grid: Yeni Bir Çağın İşlemcisi", Grid, a new era computer, Bilim ve Teknik, March 2010, 48-51.
- "Bir Fizikçi Hayali ve Mikro Karadelikler", A physicist's dream and micro black holes, Bilim ve Teknik, February 2010, 22-25.
- "Bir gök feneri ve Parçacıkların Hikayesi", A beacon in space and story of cosmic rays, Bilim ve Teknik, January 2010, 24-29.
- "CERN ve Büyük Hadron Çarpıştırıcısı", CERN and the LHC, Bilim ve Teknik, August 2009, p. 74-77.
- Telekom Dünyası (Telecommunications World), Monthly journal in Turkey, monthly science columnist, June 2008 – December 2008.

SEMINARS and INVITED TALKS

- "CERN and Universal Puzzles", The first Science Café organized by TÜBİTAK, Ankara, 27 October 2015
- "CERN and a Universal Puzzle", TÜBA Conference, Bulent Ecevit University, Zonguldak, 12th October 2015
- "A Universel Puzzle", TÜBİTAK Science Talks, Trabzon, 25th May 2015
- "CERN and a Universal Puzzle", TÜBA Conference, Gebze Technical University, İzmit, 18th May 2015
- "CERN and a Universal Puzzle", Abant İzzet Baysal University, Bolu, 30th March 2015
- "A Universal Puzzle", İzmir Innovation Week, 19th March 2015
- "A Universal Puzzle", METU Leaders Conference, 11th March 2015
- "CERN and a Universal Puzzle", TÜBA Conference, Erciyes University, Kayseri, 16th February 2015
- "CERN and a Universal Puzzle", TÜBA Conference, Çanakkale 18 Mart University, Çanakkale, 8th December 2014
- "Bright Grey", Turkish Women's International Network (TurkishWIN), Bilkent University Teknopark, Ankara, 5 November 2014
- In Conversation: Exploring Art and Science Collaboration, AHRC, University of London, Londra 9 Ekim 2014
- "AMS-02 and Space Radiation", TÜBİTAK Space Institute, Ankara, 30 September 2014

- "CERN and a Universal Puzzle", TÜBA Conference, Harran University, Şanlıurfa, 5th May 2014
- "CERN and a Universal Puzzle", TÜBA Conference, Karadeniz Technical University, Trabzon, 1st April 2014
- "Why CERN membership?" Swiss Chamber of Commerce, Istanbul, 19th of February 2014
- "CERN and a Universal Puzzle", TÜBA Conference, Ağrı Ibrahim Çeçen University, Agrı, 27th May 2013
- "AMS-02 and the Search for Dark Matter", Seminar, Istanbul University, Istanbul, 6th May 2013
- "CERN and a Universal Puzzle", TÜBA Conference, Erzurum Atatürk University, Erzurum, 4th March 2013
- "CERN and a Universal Puzzle", TÜBA Conference, Uludağ University, Bursa, 25th February 2013
- "Bilim, Teknoloji ve CERN", (Science, Technology and CERN), Liderlik Forumu, Leadership Forum, Ankara, April 2012
- "Accelerating Science: A Talk on CERN Research and the Traveling Exhibition", Faculty of Arts and Sciences, General Seminar, METU, Ankara, 28th March 2012
- "The Dark Side of the Universe", Robert College of Istanbul, 24 October 2011.
- "Energy Problem: A physicist's perspective", Bilkent University Science and Arts Club, 26 April, 2011.
- "The Big Bang and Puzzles for CERN to solve", Afyon Kocatepe University, 29 December 2010, also, Yıldız Technical University and Mersin High School.
- "A Universal Puzzle since the Big Bang", European Researchers' Night, Bilkent University, 24th September 2010
- "CERN's flagship: LHC", keynote speech at Uludağ University Robotics Days, 1st May 2010
- "Particle Physics", fundraising talk in support of the Engin Arik Fellowship given to Turkish summer students, Bilfen schools, 20th April 2010
- "The LHC Project", outreach talk given at IEEE Congress of University Club Presidents, Yeditepe University, February 2010
- "CERN and the LHC", outreach talk given at the Istanbul Technical University, October 2009.
- "ATLAS SCT and Trigger systems and the Potential for New Physics", departmental seminar at Middle Eastern Technical University, Turkey, October 2009.
- "CERN ve Büyük Hadron Çarpıştırıcısı", Bilim ve Teknik (the leading popular science journal in Turkey), August 2009, p. 74-77. Commissioned 4 new articles for Bilim ve Teknik for the next year.
- "The ATLAS Trigger System", departmental seminar presented at Cambridge University, February 2009.
- "ATLAS Semi-Conductor and Trigger Systems and Potential for New Discoveries", departmental seminar presented at Bogazici University, Turkey, December 2008.
- "CERN and the LHC project" Invited talks presented at Sabanci University Energy Club, Atatürk University Physics Department, Usküdar American High School and Cerrahpaşa Medical School, December 2008.
- "The LHC project at CERN" Invited talk presented at the Turkish Chemical

Society, August 2008.

- Telekom Dünyası (Telecommunications World), Monthly journal in Turkey, monthly science columnist since June 2008.
- "The state and future of Particle physics" Invited talk at the semester closing ceremony of the Turkish Air Force Academy, January 2008.
- "LHC Computing Grid and ATLAS Computing Model", Invited talk presented at a joint meeting between TUBITAK ULAKBIM and TAEK (Turkish Atomic Energy Agency) for decision towards a Turkish Tier-2 Grid Center, September 2007, Ankara. Turkey now has a Tier-2 center.
- "The ATLAS Semiconductor Tracker", departmental seminar at Oxford University, May 2007.

SCHOOLS ATTENDED

- CERN School of Computing, Dubrovnik, Croatia, August 2007
- European School of High Energy Physics, Barcelona, Spain, June 2004
- New England Particle Physics Student Retreat, New Hampshire, August 2002
- Young Leaders Seminar, Turkish Embassy, Washington DC, 1999
- MathCamp, Mathematics Summer school, University of Seattle, July-August 1995
- MathCamp, Mathematics Summer school, University of Toronto, July-August 1994

TEACHING

- METU Physics 591/691, Seminar Course for Masters and PhD Physics students, Fall 2012-Spring 2013.
- METU Physics 207, Modern Physics for Electronics Engineers, Fall 2011-Spring 2015
- METU Physics 106, Introductory Electromagnetism, Spring 2011.
- Summer student advisor to two CERN Summer Students, 2008.
- Teaching assistant for Experimental Physics courses at MIT: 8.13 in Fall 2002 and 8.14 in Spring 2004
- Grader for 8.033 Special Relativity, 8.03 Wave Dynamics and 18.085 Mathematical Methods for Engineers at MIT
- Invited lecturer, "Levels of Infinity" at Mathcamp, Mathematics Summer School, University of Toronto, July 1998

OUTREACH

- IPPOG (International Particle Physics Outreach Group) "Physics Masterclass" in Turkey, at METU on the 16th and 23rd of March 2015 for 64 high school students
- IPPOG (International Particle Physics Outreach Group) "Physics Masterclass" in Turkey, at METU on the 7th of April 2014 for 32 high school students.
- First IPPOG (International Particle Physics Outreach Group) "Physics Masterclass" in Turkey, at METU on the 18th of March 2013 for 32 high school students.
- Responsible for bringing "Accelerating Science", CERN's traveling exhibition, to METU, Ankara, January-July 2012. Visited by 36,000 people over 3 months.
- ATLAS and CERN Tour Guide since November 2005.
- Discussed dark matter and LHC with Prof. George Smoot in the Nature

documentary on the Lindau Nobel meeting, 2008.
- ATLAS media representative at the LHC Startup Day, 2008.
- Interviews with the New Scientist and Science Careers, 2008.
- CERN representative for Turkish media: Interviews and ATLAS tours with over a dozen Turkish newspapers and TV channels. 2006 until now.
- Worked closely with producer S. Thurston for Turkish National TV documentary, "From the Tiny to the Universe" 2006-2008.
- Interview with the BBC on ATLAS silicon tracker, Oxford, 2005
- Interview with Milliyet, a high circulation Turkish Newspaper, and the Turkish National Radio, about carrying the Olympic Flame and promoting the pending Turkish membership at CERN, June 2004

SKILLS

- Programming:
- Good knowledge of C++, python, fortran, C, perl
- Lots of experience with XML, HTML and several shells
- Operating Systems:
- Linux, NetBSD, MacOS, Windows
- Many years as Linux system administrator
- Tools:
- ROOT, GEANT, PAW, Matlab, Mathematica, PVSS, Grid tools
- Languages:
- Turkish (native), English (fluent), French (basic)

INTERESTS

- Member of American Physical Society.
- Member of Turkish Physical Society.
- Member of Institute of Physics.
- Ballroom dancing since 1999. Member of the Oxford University Beginner's Dancesport Team, 2005. Silver medal from IDTA in standard dances.
- Skiing with the CERN Ski Club for 4 years.
- Sailing since 1997, dinghies, Rhodes-19s.
- Playing the piano since 1994. Many small concerts.
- Soprano with the MIT Choir for seven years, starting 1997. More than two dozen concerts at MIT. Concerts in Hungary and Austria in 1999.

REFERENCES

- Prof. Dr. Mario-Martinez Perez, IFAE Barcelona, ATLAS Group, (mmp@ifae.es)
- Dr. Antony Weidberg, Oxford University, Department of Physics (t.weidberg1@physics.ox.ac.uk)
- Dr. Fabiola Gianotti, CERN, Director General of CERN, (gianotti@mail.cern.ch)
- Dr. Heinz Pernegger, CERN, ATLAS Semi-Conductor Tracker Project Coordinator (heinz.pernegger@cern.ch)
- Prof. Ulrich J. Becker, MIT, Department of Physics, AMS-02 Experiment, (becker@mitlns.mit.edu)
- Prof. Samuel C. C. Ting, MIT, Department of Physics, Principal Investigator of AMS-02 Experiment, (Samuel.ting@mit.edu)
- Dr. Ilias Efthymiopoulos, CERN, Machines and Experimental Facilities Group,

(ilias.efthymiopoulos@cern.ch)

- Prof. Dr. Wolfgang Schürer, Lindau Nobel Foundation Chairman (wschuerer@msag.ch)
- Dr. Emmanuel Tsesmelis, CERN, Advisor to the Director General on Turkish Relations (Emmanuel.Tsesmelis@cern.ch)
- Prof. Dr. Mehmet Zeyrek, METU, Head of Department of Physics (zeyrek@metu.edu.tr)
- Dr. Alime Yanastas, ASELSAN, Director of Satellite Payload Programs, (ayanartas@aselsan.com.tr)