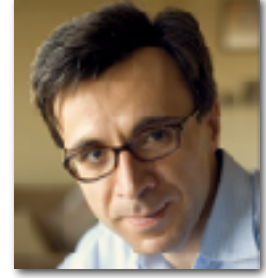


Curriculum Vitae

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EDUCATION

- o Ph.D. in Physics: September 2003
Massachusetts Institute of Technology, Cambridge, MA
- o M.S. in Physics: February 1998
University of Pittsburgh, Pittsburgh, PA
- o B.S. in Physics: July 1995
Bogazici University, Istanbul, Turkey
- o B.S. in Electrical and Electronics Engineering: July 1995
Bogazici University, Istanbul, Turkey

ACADEMIC POSITIONS

- o **Professor:** Boğaziçi University, Department of Physics [2013-Present]
- o **Associate Professor:** Boğaziçi University, Department of Physics [2007-2013]
- o **Assistant Professor:** Boğaziçi University, Department of Physics [2006-2007]
- o **Research Scientist:** Massachusetts Institute of Technology, Physics/L.N.S. [2004-2006]
- o **Postdoctoral Associate:** Massachusetts Institute of Technology, Physics/L.N.S. [2003-2004]
- o **Research Assistant:** Massachusetts Institute of Technology, Physics/L.N.S. [1998-2003]
- o **Research Assistant:** University of Pittsburgh, Department of Physics. [1995-1998]

ADMINISTRATIVE and COUNCIL/COMMITTEE DUTIES

- o Boğaziçi University, member of "Araştırma Politikaları Komisyonu" [2013-Present]
- o Boğaziçi University, member of "Bilgi Teknolojileri Kurulu" üyeliği [2012-Present]
- o TAEK, member of "Danışma Kurulu" [2011-Present]
- o Boğaziçi University, member of "Araştırma Politikaları Kurulu" [2008-Present]
- o Member of Computer Systems Committee (Physics) [2006-2014]
- o Member of "Fen Edebiyat Fakültesi Yönetim Kurulu" [2012-2013]
- o Vice Chair (Physics) [2009-2010]

ACADEMIC DUTIES

- o Referee for TÜBİTAK proposals [2007-Present]
- o Advisor to 5-6. semester physics undergraduate students [2011-Present]
- o Advisor to double major students [2011-Present]
- o Member of PhD Qualifier Exam Committee [2010-2014]
- o Member of Graduate Student Selection Commission [2009-2011]
- o Advisor to Prep. students [2006-2011]
- o Referee for IEEE Communication Letters - [2006-2008]

FELLOWSHIPS and AWARDS

- o Boğaziçi University "Araştırmada Üstün Başarı/Genç" Award - 2012
- o TÜBİTAK Encouragement Award - 2009
- o TÜBA GEBİP Award - 2008
- o Graduate School Fellowship, M.I.T. [1998-2003]

GRADUATE THESES DIRECTED

- o PhD Thesis by Erol Ertan, "Cross sections for neutron-deuteron elastic scattering in the energy range 135-250 MeV", 2013
- o MS Thesis by Veli Uğur Güney, "Triggerless Particle Identification Systems Using FPGA", 2010

GRANTS/PROJECTS as PRINCIPLE INVESTIGATOR

- o Tübitak 1001, Yeni Nesil Çok Amaçlı Veri Edinim Sistemi Geliştirilmesi
Proje No: 107T538, Toplam Bütçe: 388,530 TL, Tarih: Ekim 2007 - Haziran 2011
- o BAP Altyapı, Boğaziçi Üniversitesi Siklotronu
Proje No: 6162, Desteklenen Bütçe: 233,810 TL, Tarih: Nisan 2011 - *Revizyonda*
- o BAP Doktora, FPGA Temelli Parçacık Tanımlama Sistemi
Proje No: 6057, Desteklenen Bütçe: 34,850 TL, Tarih: Mart 2011 - Devam etmekte

RESEARCH EXPERIENCE

- **Boğaziçi University – Faculty (2006-Present):**
Principle Investigator of a project titled “Development of The Next Generation General Purpose Data Acquisition Systems”, supported by TUBITAK. Developing a data acquisition system exclusively based on *digital* systems using a fast sampling ADC and cutting edge FPGAs technologies. This is an interdisciplinary research involving physicists and electrical engineers. We develop a pulse analyzer board which fits sampled pulses to a multi-parameter model and sends the model parameter to the host computer. This is achieved in a dead-timeless manner. The design specification is 0.1 nsec timing resolution with about a MHz pulse rate **per** channel. Principle investigator of Boğaziçi University Cyclotron Project.
- **Massachusetts Institute of Technology – L.N.S. Research Scientist (2004-2006):**
Provided support for data analysis for several physics channels of Bates Large Acceptance Spectrometer Toroid (BLAST) program. Supervised graduate students for their thesis work. Served as the experiment coordinator. Supervised undergraduate students during their summer projects at MIT- Bates Laboratory and Los Alamos National Laboratory (LANL). Contributed neutron induced deuteron breakup experiment in LANL to study the effect of three-body nuclear force. Developed Monte Carlo study of the proposed experiments at LANL to design the experimental apparatus.
- **Massachusetts Institute of Technology – L.N.S. Postdoctoral Associate (2003-2004):**
Participated in Bates Large Acceptance Spectrometer Toroid (BLAST) experiment. Designed and built a data acquisition system of Compton polarimeter from scratch, which requires, VME based fast electronics, real-time histogramming, TCP/IP software development, and real-time data stream processing. Implemented a histogrammer on VxWorks using a fast ADC and interrupt-based data processing of digitized pulse shape. Integrated data streams from several parts of the experiments in real time environment. Contributed to the event reconstruction and calibration of the BLAST wire chamber detectors. Contributed to Blast DAQ system. Developed codes for online data processing and offline data analysis.
- **Massachusetts Institute of Technology - Research Assistant (1998-2003):**
Participated, as a member of the M.I.T. collaboration, in several nuclear physics experiments at the Los Alamos National Laboratory, Neutron Science Center including Neutron Proton Bremsstrahlung, Neutron Beam Polarization Measurement, Pion production, Neutron-Deuteron Scattering. Worked on all parts of these experiments: data acquisition, online data processing, offline data analysis, Monte Carlo simulations, software and hardware engineering. Worked as a data acquisition, fast electronics, data processing, and computer expert. Designed and implemented a new data acquisition system including highly configurable online and offline data analysis based on MIDAS-ROOT that answers the specific needs of WNR facility of LANSCE.
- **University of Pittsburgh, Teaching and Research Assistantship (1995-1998):**
Fermi National Laboratory (FNAL), 1997-1998: Participated in E872-Direct Observation of Nu Tau (DONUT) experiment which found the first direct evidence for Tau neutrino at FNAL. (http://www.fnal.gov/pub/presspass/press_releases/donut.html) Worked on Monte Carlo simulation of trigger system, developed codes for state of the art fiber optic particle tracker, contributed to the analysis of terabytes of data for the discovery of this newest particle. Developed and tested new algorithms to improve the speed and the efficiency of the data analysis. Brookhaven National Laboratory, 1996-1997: Developed Parallel Processing algorithms on Pittsburgh Super Computer Center's Cray T3E for the analysis of Kaon experiments.
- **Bogazici University, Istanbul Turkey (1991-1995):**
CERN Switzerland/France, 1995: Worked on SMC experiment for detector calibrations. Worked on ATLAS experiment for Monte Carlo simulations of the trigger system.

TEACHING EXPERIENCE

- o **Bogazici University (2006-Present):**
Supervising graduate and undergraduate students. Offering several undergraduate and graduate level courses, including:
 - Phys 101: Physics I
 - Phys 201: Physics III
 - Phys 311/312: Quantum/Modern Physics I/II
 - Phys 325: Mathematical Methods for Physics
 - Phys 380: Intro. to EM Radiation
 - Phys 401/402: Electromagnetism I/II
 - Phys 442/443: Experimental Physics I/II
 - Phys 48Y: Programming with Python
 - Phys 496: Computational Physics
 - Phys 497/150: Information and Entropy
 - Phys 499: Data Structures and Algorithm Analysis.
 - Phys 58S: Simulations in Physics
 - Phys 651/652: Nuclear Physics I/II
 - Phys 68N: Advanced Computations in Physics
- o **Massachusetts Institute of Technology (2004-2007):**
Supervising graduate and undergraduate students, offering lecture series on data analysis techniques.
- o Experimenting the use of Massively Online Open Course (MOOC) in collaboration with MITx. Teaching Phys 48Y, through MIT's 6.00x (Python). [Ongoing.]
- o Offered some of the above courses at Bahçeşehir and Kadir Has universities in addition to survey type "Global Energy Crisis" course (GEP 1128) at Bahçeşehir University.

PEER REVIEWED PUBLICATIONS

Note 1: Over 160 CERN-ATLAS collaboration-publications between 2008-2013 are not listed

Note 2: SciIndex: Total of 22 publications (non-ATLAS) received over 1000 citations

Note 3: SciIndex: h-index is 10 (including only non-ATLAS publications)

- Ertan E., Akdogan T; *et al.*, "Cross sections for neutron-deuteron elastic scattering in the energy range 135-250 MeV", *Physical Review C*, 87, 034003, 2013
- Zhang C, Kohl M, Akdogan T; *et al.*, "Precise Measurement of Deuteron Tensor Analyzing Powers with BLAST", *Physical Review Letters*, 107, 252501, 2011
- Crawford C, Akdogan T, Alarcon R; *et al.*, "Role of mesons in the electromagnetic form factors of the nucleon", *Physical Review C*, 82, 045211, 2010
- Hasell D, Akdogan T; *et al.*, "The BLAST experiment", *Nuclear Instrumentations and Methods in Physics Research A*, 603, 247-262, 2009
- Geis E, Kohl M, Ziskin V; *et al.*, "Charge Form Factor of the Neutron at Low Momentum Transfer from the $^2\text{H}(e, e'n)^1\text{H}$ Reaction", *Physical Review Letters*, 101, 042501, 2008
- Safkan Y, Akdogan T, Franklin WA; *et al.*, "Differential cross section for neutron-proton bremsstrahlung", *Physical Review C*, 75, 031001, 2007
- Crawford CB, Sindile A, Akdogan T; *et al.*, "Measurement of the proton's electric to magnetic form factor ratio from $^1\text{H}(e, ep)$ ", *Physical Review Letters*, 98, 052301, 2007
- DONUT Collaboration - Kodama K.; *et al.*, *Identification of neutrino interactions using the DONUT spectrometer*, *Nucl. Instrum. Meth. A* 516, 21, 2004
- J.L. Matthews, T. Akdogan, *New results for bremsstrahlung and pion production in the neutron proton system*, *Phys. Scripta T104*, 49, 2003
- DONUT Collaboration - Schwienhorst R.; *et al.*, *A new upper limit for the tau-neutrino magnetic moment*, *Phys. Lett. B* 513, 23, 2001
- DONUT Collaboration - Kodama, K.; *et al.*, *Observation of tau neutrino interactions*, *Phys. Lett. B* 504, 218, 2001
- Franklin WA, Akdogan T, "A Compton polarimeter for the MIT/Bates South Hall Ring", *Progress in Particle and Nuclear Physics*, 44, 61, 2000
- SMC Collaboration - Adams, D; *et al.*, *Measurement of the SMC muon beam polarization using the asymmetry in the elastic scattering off polarized electrons*, *Nucl. Instrum. Meth. A* 443, 1, 2000
- SMC Collaboration - Adeva, B.; *et al.*, *A next-to-leading order QCD analysis of the spin structure function g_1* , *Phys. Rev. D* 58, 112002/1-15, 1998
- SMC Collaboration - Adeva, B.; *et al.*, *Spin asymmetries A_1 and structure functions g_1 of the proton and the deuteron from polarized high energy muon scattering*, *Phys. Rev. D* 58, 112001/1-17, 1998
- SMC Collaboration - Adeva, B.; *et al.*, *Polarized quark distributions in the nucleon from semi-inclusive spin asymmetries*, *Phys. Lett. B* 420, 180, 1998
- SMC Collaboration - Adams, D.; *et al.*, *The spin-dependent structure function $g_1(x)$ of the deuteron from polarized deep-inelastic muon scattering*, *Phys. Lett. B* 396, 338, 1997

INTERNATIONAL CONFERENCE PROCEEDINGS

- Ertan E, Akdogan T; *et al.*, "Cross sections for neutron-deuteron elastic scattering in the energy range 135-250 MeV", *Few Body Systems* 20, 2012
- Basaran A, Akdogan T; *et al.*, "FPGA Based Particle Identification in High Energy Physics Experiments", 2012 IEEE 23rd International Conference on Application Specific Systems, Architectures and Processors, 181-184, 2012
- Akdogan T, "The proton electric to magnetic form factor ratio at low Q^2 ", *Particles and Nuclei International Conference (PANIC) - AIP Conf. Proc.*, 842, 330-332, 2006
- Franklin WA, Akdogan T, Dutta D; *et al.*, "The MIT-Bates Compton Polarimeter", *AIP Conf. Proc.*, 675, 1058-1062, 2003
- Six E, Shatunov Y, Booth E; *et al.*, "Polarized Electrons in the MIT-Bates South Hall Ring", *IEEE Particle Accelerator Conference, Chicago 2001, Particle Accelerator*, 3597-3599, 2001
- Seabury EH, Haight RC, O'Donnel JM; *et al.*, "Precision measurement of the $n+p \rightarrow d+\gamma$ cross section for testing big-bang nucleosynthesis models", *AIP Conf. Proc.*, 576, 339-341, 2001

NATIONAL CONFERENCE PROCEEDINGS

- Akdogan T; *et al.*, "Parmakizi İmgelerinin İyileştirilmesi ve Özniteliklerinin Bulunması", *Sinyal İşleme ve Uygulamaları '95*, 48-55, 1995

OTHER INTERNATIONAL PUBLICATIONS

- Akdogan T, Arik E, Cetin S; *et al.*, "Photoelectron counting using a position sensitive photomultiplier under Linux," *Balkan Physics Letters*, 5, 179, 1997