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Birth Place and Date

Ankara, May 13, 1960

Education

1991	Ph.D. <i>Middle East Technical University, Physics Department</i> <i>Thesis title: 'Large x_F inclusive Λ production at the CERN Sp $\bar{p}S$ collider'</i> <i>(UA8 experiment)</i>
1985	M.Sc. <i>Middle East Technical University, Physics Department</i>
1982	B.Sc. <i>Middle East Technical University, Physics Department</i>

Languages

Turkish, English, French

Employment and academic experience

2003-on	<i>Professor of Physics, METU</i>
2001-02	<i>Visiting Professor, Texas Tech University, USA</i>
1998-03	<i>Associate Professor of Physics, METU</i>
1996-98	<i>Assistant Professor of Physics, METU</i>
1995	<i>Visiting Researcher (Monbusho fellowship), Nagoya University, Japan</i>
1993-96	<i>Instructor, METU</i>
1982-93	<i>Research Assistant, METU</i>
1991-92	<i>Post Doctoral Research at CERN</i>
1987-91	<i>Ph.D. research as a TÜBİTAK-NATO Ph.D. fellow</i>

Administrative positions at the university

METU, Physics Department, chairperson, 2012-on
METU, Physics Department, vice chairperson, 2009-2012
METU Faculty of Arts and Sciences, faculty academic board member, 1997- 2001, 2003-2009

Other administrative positions

2011-15	<i>Turkish Atomic Energy Commission member.</i>
2006-08	<i>The Council of Higher Education (YÖK), Diploma equivalency committee member.</i>
2004-05	<i>TÜBİTAK, FP6 program Mobility National Contact Point (NCP) and Mobility Program Committee member.</i>
2003-05	<i>Turkish Physical Society (TFD), President of Ankara branch.</i>
1994-97	<i>Turkish Physical Society (TFD), Ankara branch executive board member.</i>

Research background

Experimental and phenomenological studies in high energy physics, collider physics, hadron physics, neutrino physics, detectors.

National research projects

2008-11 (PI)	<i>TÜBİTAK 108T502, 'Study on neutrino physics and dark matter with dedicated detector and DAQ (Data Acquisition) systems at low energy and low background experiments'</i>
2006-07 (PI)	<i>TÜBİTAK TBAG-HD/190, 'Discovering SUSY and SUSY-related cosmology at CMS'</i>
2007-10	<i>TAEK-CERN, 'Simulation study data analysis on the standard model and beyond at CMS experiment'</i>
2004-07	<i>TAEK-CERN, 'Simulation study on Higgs and Beyond the Standard Model at CLIC- Linear electron positron Collider'</i>
1997-99 (PI)	<i>TÜBİTAK TBAG-1591, 'Very forward calorimeter for CERN CMS experiment very forward'</i>
1993-95 (PI)	<i>TÜBİTAK-DPT-44, 'Development of a computer controlled microscope analysis system for the CHORUS experiment'</i>
1992-00	<i>TÜBİTAK-DPT-5, "High energy physics research at CERN"</i>

International co-operation research projects

1999-02	<i>'Cooperative Research between the University of Iowa, METU and Çukurova University on CMS Forward Calorimetry at LHC/CERN', NSF-INT-9820258.</i>
1997-00	<i>'Software collaboration in data analysis for CERN-VFCAL detector for LHC', OMFB (Hungary)-TUBİTAK.</i>

Teaching experience

Physics 111, 112	<i>Physics I ve Physics II (at METU)</i>
Physics 105, 106	<i>Physics I ve Physics II (at METU)</i>
Physics 202, 207	<i>Modern Physics (at METU)</i>
Physics 308	<i>Experiments in Physics (at METU)</i>
Physics 407,408	<i>Particle Physics I-II (at METU)</i>
Physics 400-415-416	<i>Project in Physics (at METU)</i>
Physics 547	<i>Techniques of Experimental High Energy Physics (at METU)</i>
Physics 105	<i>Physics I (at METU- Northern Cyprus Campus)</i>
Physics 1308 (Physics I)	<i>Physics I (at Texas Tech University, USA)</i>

Development of new courses and labs at METU

Physics 308	<i>Experiments in Physics. Undergraduate experimental course for physics students.</i>
Physics 547	<i>Techniques of Experimental High Energy Physics. Elective graduate course for M.Sc. and Ph.D. HEP students.</i>
High energy physics, Emulsion lab	<i>Setting up and development of a new computer controlled microscope analysis system for the CHORUS experiment.</i>

Thesis Supervision

- 1) Eren Özkapıcı, M.Sc., 'Search for $H \rightarrow ZZ \rightarrow l\bar{l}j$ in vector boson fusion at the CMS experiment at the LHC', January 2001.
- 2) Hatice Yıldız, Ph.D., 'Observing $H \rightarrow WW/ZZ$ in weak boson fusion with forward jet tagging at the CERN CMS experiment', July 2002.
- 3) Sezen Sekmen, M.Sc., 'Higgs formation at the Black Hole decays at LargeHadron Collider', September 2003.
- 4) Efe Yazgan, Ph.D., 'Search for a Standard Model Higgs Boson in CMS via Vector Boson Fusion in the $H \rightarrow WW \rightarrow l\bar{l}\nu\nu$ channel and Optimization of Energy Reconstruction in CMS using Test Beam 2006 Data', June 2007.
- 5) Sezen Sekmen, Ph.D., 'Supersymmetry with Heavy Scalars at the LHC', December 2008.

- 6) İlina Vasileva Akin, M.Sc., 'Search for Scalar and Tensor Unparticles in the Diphoton Final State in CMS Experiment at the LHC', September 2009.
- 7) Ayşe Çağıl, Ph.D., 'Production of Scalars at the Electron Colliders in the Context of Littlest Higgs Model', December 2009.
- 8) Hüseyin Dağ, Ph.D., 'Investigation the Semileptonic B to $K_1(1270,1400)$ Decays in QCD Sum Rules', February 2010.
- 9) Selçuk Bilmiş, M.Sc., 'Study on Non Standard Interaction of Neutrino and Unparticle Physics with Reactor Neutrino-Electron Scattering at Low Energy in Texono experiment', expected September 2010
- 10) Buğra Bilin, M.Sc., 'Production of Z +jet Events and HF Energy Scale Calibration at 7 TeV in the CMS Experiment at LHC', September 2011.
- 11) İhsan Ozan Yıldırım, M.Sc., 'Measurement of neutron background in Kuo-Sheng neutrino laboratory', January, 2012.
- 12) İlina Vasileva Akin, Ph.D. 'Measurement of the cross section ratio $\sigma(\text{chic}2)/\sigma(\text{chic}1)$ for prompt chic production with CMS experiment, September, 2012.

Talks & conferences and schools

Talk, 'V+jets production at the CMS', IPMLHC2013: Second IPM Meeting on LHC Physics, 7-12 October, 2013, Tehran

Poster, 'Flavor Changing Neutral Currents Transition of the Σ_Q to Nucleon in Full QCD and Heavy Quark Effective Theory', ICHEP 2010, 22-28 July, 2010, Paris

Poster, 'Search for a Standard Model Higgs Boson in CMS via Vector Boson Fusion in the $H \rightarrow WW \rightarrow l\nu l\nu$ channel' Lepton-Photon, August 13-18 2007, Daegu, Korea

Poster, 'SUSY Dark Matter at Linear Collider', 33rd International Conference on High Energy Physics, July 26-August 2, 2006, Moscow, Russia

Lepton-Photon 2003, Fermilab, Chicago, USA, 11-16 August 2003

Talk, 'qqH to $H \rightarrow WW/ZZ$ decays at CMS', LHC Days in Split, 8-12 October, 2002, Split, Croatia

Abstract, 'Higgs observability in vector boson fusion channel for $m_H=300-800$ GeV', 31st International Conference on High Energy Physics, Amsterdam, 24-31 July, 2002

Talk, 'CMS experiment; Overview', FourSeas Conference, 16-21 April, 2002, Thessaloniki, Greece

Abstract, 'Spectral and time structure analyses of electron-induced radiation in multi-mode optical silica fibers', and

Poster, 'Radiation hardness studies of quartz fibers irradiated with 500 MeV electrons at CERN' IEEE Nuclear Science Symposium conference, 2001 November 4-10, San Diego, CA, USA

Abstract, 'Radiation hardness of quartz fibers under neutron irradiation' International Europhysics Conference on High Energy Physics, EPS-HEP99, 15-21 July 1999, Tampere, Finland

Talk, 'The scanning facility in Ankara: Status and Perspectives' International Workshop on Nuclear Emulsion Techniques, 12-14 June 1998, Nagoya Congress Center and Nagoya University, Nagoya, Japan

28th International Conference on High Energy Physics, 25-31 July 1996, Warsaw, Poland

Talk, 'Performance of the CHORUS detector for $\nu_\mu \rightarrow \nu_\tau$ oscillations', International Europhysics Conference on High Energy Physics, EPS-HEP 95, Brussels, 27 July - 2 August 1995, Belgium

FourSeas Conference, Trieste, 25 June - 1 July 1995, Italy

Scientific Secretary, Third Workshop on Tau Lepton Physics, TAU94, Montreux, Switzerland, September 1994

Talk, 'Inclusive Λ production at large xF at the SppS collider', Rencontres de Moriond, QCD and High Energy Interactions, 22-28 March, Les Arcs, France, March 1991

Towards the LHC Experimental Programme, Evian, France, March 1992

INFN Eloisatron Project, 12th Workshop: New Technologies for Supercolliders, Erice, Italy, September 1990

International School of Elementary Particle Physics, Duilovo-Split, Yugoslavia, September 1986

CERN-JINR School of Physics, Urbino, Italy, September 1985

International School of Elementary Particle Physics, Kupari-Dubrovnik, Yugoslavia, September 1984

Selected Publications

- 1) *'Limits on spin-dependent couplings of WIMP dark matter with a p-type point-contact germanium detector'*
H. B. Li et al., Phys. Rev. Lett. 110 (2013) 26, 261301
- 2) *'Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC'*
The CMS Collaboration, Phys. Lett. B 716 (2012) 30
- 3) *'Constraints on non-commutative physics scale with neutrino-electron scattering'*
S. Bilimis et al., Phys. Rev. D85 (2012) 073011
- 4) *'The Neutral Heavy Scalar Production associated with Z(L) in the Littlest Higgs Model at ILC and CLIC'*
Cagil A., Zeyrek M. T., Acta Physica Polonica B Vol. 42, Issue 1, Pages 45-60 (2011)
- 5) *'The Semileptonic B to K(1) (1270,1400) decays in QCD Sum Rules'*
Dag H., Ozpineci A., Zeyrek M.T., Journal of Physics G-Nuclear and Particle Physics Vol. 38 Issue 1, 015002 (2011)
- 6) *'Constraints on the Nonstandard neutrino interactions and unparticle physics with neutrino over bar (e) electron scattering at the Kuo-Sheng nuclear power reactor'*
Deniz M. et al., Physical Review D, 82, Issue 3, 033004 (2010)
- 7) *'Measurement of (nu)over-bar(e)-electron scattering cross section with a CsI(Tl) scintillating crystal array at the Kuo-Sheng nuclear power reactor'*
Deniz, M. et al., Physical Review D, 81, Issue 7, 072001 (2010)
- 8) *'ZL associated pair production of charged Higgs bosons in the littlest Higgs model at e(+)e(-) colliders'*
Çağıl A., Zeyrek MT, Physical Review D, 80, Issue 5, 055021 (2009)
- 9) *'The CMS barrel calorimeter response to particle beams from 2 to 350 GeV/c'*
Abdullin S. et al., European Physical Journal 60 (2009)359-373
- 10) *'Design, performance and calibration of the CMS hadron-outer calorimeter'*
Abdullin S. et al., European Physical Journal 57, Issue 3 (2008)653-663
- 11) *'The CMS experiment at the CERN LHC'*
Khachatryan V. et al., Journal of Instrumentation, Vol. 3 S08004 (2008)
- 12) *'Final results on nu(mu)→nu(tau) oscillation from CHORUS experiment''*
Eskut E et al., Nuclear Physics B793(2008) 326-343.
- 13) *'Search for a standard model Higgs Boson in CMS via vector boson fusion in the H→WW→lnulnu channel'*
Yazgan E et al., European Physical Journal C 53 (2008) 329-344.

- 14) *'Design, performance and calibration of the CMS forward calorimeter wedges'*
Abdullin S et al., European Journal of Physics C53 (2008) 139-166
- 15) *'Design, performance and calibration of the CMS hadron-barrel calorimeter wedges'*
Abdullin S et al., European Journal of Physics C55 (2008) 159-171.
- 16) *'Observing higher-dimensional black holes at the LHC'*
Sekmen S, Zeyrek MT, European Physical Journal C 39 (4) (2005) 503-509.
- 17) *'Energy resolution and the linearity of the CMS forward quartz fibre calorimeter pre-production-prototype (PPPI)'*
Ayan AS et al., Journal of Physics G-Nuclear and Particle Physics 30 (12) (2004) N33-N44.
- 18) *'Measurement of fragmentation properties of charmed particle production in charged-current neutrino interactions'*
Onengut G et al., Physics Letters B604 (3-4) (2004) 145-156.
- 19) *'Measurement of charm production in antineutrino charged-current interactions'*
Onengut G et al., Physics Letters B604(1-2) (2004) 11-21.
- 20) *'Experimental study of trimuon events in neutrino charged-current interactions'*
Kayis-Topaksu A et al., Physics Letters 596(1-2) (2004) 44-53.
- 21) *'Cross section measurement for quasi-elastic production of charged baryons in νN interactions'*
Kayis-Topaksu A et al., Physics Letters B575(2003) 198-207.
- 22) *'Measurement of the Z/A dependence of neutrino charged-current total cross section'*
Kayis-Topaksu A et al., European Physical Journal C30 (2003) 159-167.
- 23) *'Study of high mass Higgs using $pp \rightarrow qqH$ '*
Yildiz HD, Zeyrek MT et al., Acta Physica Polonica B34 (2003) 4001-4017.
- 24) *'Measurement of Λ_c^+ production in neutrino charged interactions'*
Kayis-Topaksu A et al., Physics Letters B 555 (2003) 156-166.
- 25) *'A study of inclusive Double-Pomeron-Exchange in $p p \rightarrow p X p$ at $\sqrt{s}=630$ GeV'*
Brandt A et al., European Physical Journal C 25 (2002) 3, 361-377.
- 26) *'Observation of one event with the characteristics of associated charm production in neutrino charged-current interactions'*
Kayis-Topaksu A et al., Physics Letters B 539 (2002) 188-196.
- 27) *"Radiation hardness studies of high OH content quartz fibers irradiated with 500 MeV electrons"*
Dumanoglu I et al., Nuclear Instruments and Methods A 490 (2002) 444-455.
- 28) *"On the difference of between calorimetric detection of electrons and photos"*
Wigmans R, Zeyrek MT, Nuclear Instruments and Methods A 485(2002) 385-398.
- 29) *"Measurement of D^0 production in neutrino charged-current interactions"*
Kayis-Topaksu A et al., Physics Letters B 527 (2002) 173-181.
- 30) *"Effects of radiation and their consequences for the performance of the forward calorimeters in the CMS experiment"*
Akchurin N et al., Nuclear Instruments and Methods B 187 (2002) 66-78.
- 31) *'Determination of the semi leptonic branching fraction of charm hadrons produced in neutrino charged current interactions'*
Kayis-Topaksu A. et al., Physics Letters B 555 (2002) 48-57

- 32) “*Observation of weak neutral current neutrino production of J/ψ* ”
Eskut E et al., Physics Letters B 503 (2001) 1-9 .
- 33) “*New results from a search for $\nu_\mu \rightarrow \nu_\tau$ and $\nu_\mu \rightarrow \nu_e$ oscillations*”
Eskut E et al., Physics Letters B 497 (2001) 8-22.
- 34) “*The trigger system of the CHORUS experiment*”
van Beuzekom MG et al., Nuclear Instruments and Methods A 427 (1999) 587-606.
- 35) “*Observation of neutrino induced diffractive D_s^{*+} production and subsequent decay $D_s^{*+} \rightarrow D_s^+ \rightarrow \tau^+ \rightarrow \mu^+$* ”
Annis P et al., Physics Letters B 435 (1998) 458-464.
- 36) “*Search for $\nu_\mu \rightarrow \nu_\tau$ oscillation using the τ decay modes into a single charged particle*”
Eskut E et al., Physics Letters B 434 (1998) 205.
- 37) “*Measurements of inclusive Λ production with large x_F at the SppS collider*”
Brandt A et al., Nuclear Physics B519 (1998) 3-18.
- 38) “*A search for $\nu_\mu \rightarrow \nu_\tau$ oscillation*”
Eskut E et al., Physics Letters B 424 (1998) 202-212.
- 39) “*Measurement of single diffraction at $\sqrt{s}=630$ GeV; Evidence for a Non-linear $\alpha(t)$ of the Pomeron*” Brandt A et al., Nuclear Physics B 514 (1998) 3-44.
- 40) “*Cross section measurements of hard diffraction at the SppS collider*”
Brandt A et al., Physics Letters B 421 (1998) 395.
- 41) “*On the difference between high energy proton and pion showers and their signals in a non-compensating calorimeter*”
Akchurin N et al., Nuclear Instruments and Methods A408 (1998) 380-396.
- 42) “*Test beam results of CMS quartz fiber calorimeter prototype and simulations of response to high energy hadron jets*”
Akchurin N et al., Nuclear Instruments and Methods A409 (1998) 593-597.
- 43) “*Test beam of a quartz fibre calorimeter prototype with a passive front section*”
Akchurin N et al., Nuclear Instruments and Methods A400(1997) 267-278.
- 44) “*The CHORUS experiment to search for $\nu_\mu \rightarrow \nu_\tau$ oscillation*”
Eskut E et al., Nuclear Instruments and Methods A401(1997) 7-44.
- 45) “*Beam test results from a fine-sampling quartz fiber calorimeter for electron, photon and hadron detection.*”
Akchurin N et al., Nuclear Instruments and Methods A399(1997) 202-226 .
- 46) “*Status report on CHORUS experiment at CERN*”
Arik E et al., Nuclear Instruments and Methods A360 (1995) 254-257
- 47) “*Search for muon to electron neutrino oscillations*”
Vilain P et al., Zeitschrift für Physik C, 64, 539-544 (1994).
- 48) “*The small angle spectrometer of experiment UA8 at the SppS collider*”
Brandt A. et al., Nuclear Instruments and Methods A327 (1993) 412-426.
- 49) “*Evidence for a super-hard pomeron structure*”
Brandt A et al., Physics Letters B297 (1992) 417-424.