

Middle East Technical University
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ACADEMIC POSITIONS

PERIOD **January 2018 — Present**
INSTITUTION **Middle East Technical University (METU), Department of
Physics** Ankara, Turkey
POSITION **Professor**

PERIOD **January 2011 — January 2018**
INSTITUTION **Middle East Technical University (METU), Department of
Physics** Ankara, Turkey
POSITION **Associate Professor**

PERIOD **September 2009 — December 2010**
INSTITUTION **Middle East Technical University (METU), Department of
Physics** Ankara, Turkey
POSITION **Assistant Professor**

PERIOD **January 2007 — March 2009**
INSTITUTION **Leibniz University of Hannover, Institute for Theoretical
Physics** Hannover, Germany
POSITION **Postdoctoral Research Associate**

PERIOD **October 2004 — December 2006**
INSTITUTION **Dublin Institute for Advanced Studies (DIAS), School of
Theoretical Physics** Dublin, Ireland
POSITION **Postdoctoral Research Associate**

EDUCATION

PERIOD **September 1999 — September 2004**
DEGREE **Ph.D. in Theoretical Physics**
RANK **2005 Syracuse University Graduate School Doctoral
Prize**
UNIVERSITY **Syracuse University** Syracuse, NY, USA
DISSERTATION **Explorations in Fuzzy Physics and Non-Commutative
TITLE** **Geometry**
SUPERVISOR **A. P. Balachandran**

PERIOD **September 1997 — May 1999**
DEGREE **M.Sc. in Theoretical Physics**
UNIVERSITY **METU** Ankara Turkey

PERIOD	September 1993 — July 1997	
DEGREE	B.Sc. in Physics	
RANK	High Honors, 3.85/4.00 CGPA	
UNIVERSITY	METU	Ankara Turkey
PERIOD	September 1995 — July 1997	
DEGREE	Minor in Mathematics	
UNIVERSITY	METU	Ankara Turkey

AWARDS AND ACHIEVEMENTS

MAY 2011	Recipient of The Turkish Academy of Sciences' The Young Scientist Award (TÜBA-GEBIP)
JAN 2011	Associate Professorship Title, Inter-University Council of Turkey
MAY 2005	Recipient of the Graduate School of Syracuse University Doctoral Prize 2005
JUL 2004	Postdoctoral Research Fellowship of Irish Research Council for Science, Engineering and Technology (IRC-SET)
1999 - 2004	Syracuse University Scholarship
(2003-2004)	Syracuse University Fellowship
&	
(1999-2000)	
2001-2003	Research Assistantship in High Energy Theory group, Syracuse University
1997-1999	Research Assistantship in High Energy Theory group, METU

COMPLETED PROJECTS

01/16-12/16	PI, Vacuum Solutions and Low Energy Effective Actions in $SU(N)$ Gauge Theories and Related Matrix Models, BAP-1 Project, METU, Ankara, Turkey
04/11-10/13	PI, Quantum Field Theories Over Spaces With Fuzzy Extra Dimensions, TUBITAK 1001-Project, 110T738, Ankara, Turkey
01/10-12/11	PI, Quantum Field Theories over Non-Commutative Spaces, BAP-1 Project, METU, Ankara, Turkey

PUBLICATIONS

Books:

- A. P. Balachandran, S. Kürkcüoğlu, S. Vaidya, *Lectures on Fuzzy and Fuzzy SUSY Physics*, World Scientific, Singapore, 2007, ISBN-10 981-270-466-3, and hep-th/0511114.

Articles:

- Ü. H. Coşkun, S. Kürkcüoğlu and G. C. Toga, *Quantum Hall Effect on Odd Spheres*, **Phys. Rev. D** **95**, no. 6, 065021 (2017) [arXiv:1612.03855 [hep-th]].
- S. Kürkcüoğlu and G. Ünal, *$U(3)$ gauge theory on fuzzy extra dimensions*, **Phys. Rev. D** **94**, no. 3, 036003 (2016) [arXiv:1607.00075 [hep-th]]
- S. Kürkcüoğlu and G. Ünal, *Equivariant Fields in an $SU(N)$ Gauge Theory with new Spontaneously Generated Fuzzy Extra Dimensions*, **Phys. Rev. D** **93**, **105019** (2016) [arXiv:1506.04335 [hep-th]].
- S. Kürkcüoğlu, *New fuzzy extra dimensions from $SU(N)$ gauge theories*, **Phys. Rev. D** **92**, **025022** (2015) [arXiv:1504.02524 [hep-th]].
- A.P.Balachandran, S. Kürkcüoğlu, A.R.de Queiroz and S.Vaidya, *Spontaneous Lorentz Violation: The Case of Infrared QED*, **Eur.Phys.J. C** **75** (2015) **2**, **89** arXiv:1406.5845 [hep-th].
- F. Ballı, A.Behtash, S. Kürkcüoğlu and G.Ünal, *Quantum Hall Effect on the Grassmannians $Gr_2(\mathbb{C}^N)$* **Phys. Rev. D** **85** (2014) **105031** arXiv:1403.3823 [hep-th].
- A.P.Balachandran, S.Kurkcuoğlu and A.R.de Queiroz, *Spontaneous Breaking of Lorentz Symmetry and Vertex Operators for Vortices*, **Mod. Phys. Lett. A**, **Vol. 28**, **No. 8** (2013) **1350028** and arXiv:1208.3175 [hep-th].
- S. Kürkcüoğlu, *Equivariant Reduction of $U(4)$ Gauge Theory over $S_F^2 \times S_F^2$ and the Emergent Vortices*, **Phys. Rev. D** **85** (2012) **105004** and arXiv:1201.0728.
- S. Kürkcüoğlu, *Noncommutative Vortices and Flux-Tubes from Yang-Mills Theories with Spontaneously Generated Fuzzy Extra Dimensions*, **Phys.Rev. D** **82** (2010) **105010** and arXiv:1009.1880[hep-th].
- D. Harland and S. Kürkcüoğlu, *Equivariant Reduction of Yang-Mills Theory over the Fuzzy Sphere and the Emergent Vortices*, **Nuc. Phys. B.** **821:380-398**,2009 and arXiv:0905.2338[hep-th].
- S. Kürkcüoğlu, *Noncommutative Q -Lumps*, **Phys. Rev. D**, **78**, **105018** and arXiv:0808.3745 [hep-th].
- S. Kürkcüoğlu *Noncommutative Nonlinear Sigma Models and Integrability*, **Phys. Rev. D** **78**, **065020** (2008) and arXiv:0804.3782 [hep-th].
- A. P. Balachandran, K. S. Gupta and S. Kürkcüoğlu, *Interacting Quantum Topologies and the Quantum Hall Effect*, **Int. J. Mod. Phys. A** **23**, **1327**, (2008) and [arXiv:0707.1219 [hep-th]].
- S. Kürkcüoğlu and O. Lechtenfeld, *Quantum Aspects of the Noncommutative Sine-Gordon Model*, **JHEP** **0709**, **020** (2007) and [arXiv:0708.1310 [hep-th]].
- S. Kürkcüoğlu and C. Saemann, *Drinfeld twist and general relativity with fuzzy spaces*, **Class. Quant. Grav.** **24**, **291** (2007) and hep-th/0606197.
- T. R. Govindarajan, S. Kürkcüoğlu and M. Panero, *Nonlocal regularisation of noncommutative field theories*, **Mod. Phys. Lett. A** **21**, **1851** (2006) and hep-th/0604061.

- A. P. Balachandran, T. R. Govindarajan, K. S. Gupta and S. Kürkcüoğlu, *Non-commutative two dimensional gravities*, **Class. Quantum Grav.** **23**, 5799 (2006) and hep-th/0602265.
- A. P. Balachandran, K. S. Gupta, S. Kürkcüoğlu, *Waves in Noncommutative Space-times*, **Phys. Rev. D** **73**, 025021 (2006), and hep-th/0503087.
- S. Kürkcüoğlu, *Nonlinear Sigma Model on the Fuzzy Supersphere*, **JHEP** **0403** (2004) 062 and hep-th/0311031.
- A. P. Balachandran, S. Kürkcüoğlu, *Topology Change for Fuzzy Physics: Fuzzy Spaces as Hopf Algebras*, **Int. J. Mod. Phys. A** **19**, 3395 (2004) and hep-th/0310026.
- A. P. Balachandran, K. S. Gupta and S. Kürkcüoğlu, *Edge Currents in Noncommutative Chern Simons Theory from a New Matrix Model*, **JHEP0309(2003) 007** and hep-th/0306255.
- A. P. Balachandran, S. Kürkcüoğlu and E. Rojas, *The Star Product on the Fuzzy Supersphere*, **JHEP0207 (2002) 056** and hep-th/0204170.

 PUBLICATIONS IN PROCEEDINGS

- F. Ball , A. Behtash, S. Kürkcüoğlu and G. Ünal, *Constructing the quantum Hall system on the Grassmannians $Gr(2)(CN)$* , **J. Phys. Conf. Ser.** **597**, no. 1, 012015 (2015).
- S. Kürkcüoğlu, *Equivariant reduction of gauge theories over fuzzy extra dimensions*, **J. Phys. Conf. Ser.** **343**, 012062 (2012).
- S. Kürkcüoğlu, *Gauge theories with fuzzy extra dimensions and noncommutative vortices and fluxons*, **J. Phys. Conf. Ser.** **306**, 012051 (2011).
- S. Kürkcüoğlu *A fuzzy supersymmetric non-linear sigma model*, **Int. J. Mod. Phys. A** **19**, 5359 (2004).
- S. Kürkcüoğlu, *Edge Currents in Non-commutative Chern-Simons Theory*, **AIP Conference Proceedings** **687**, edited by Amir H. Fariborz.

 PRESENTATIONS AND PARTICIPATION IN CONFERENCES AND WORKSHOPS

- Invited Seminar at Koc University, Department of Physics, Istanbul, 17 October 2017.
- Invited seminar at Bilkent University, Department of Physics, Ankara, 12 April 2017.
- *Quantum Hall Effect on Odd-Dimensional Spheres*, talk given at *International Workshop on Mathematical Foundations of Quantum Mechanics and Applications*, held at Institute for Mathematical Sciences (ICMAT), Madrid, Spain, 30 January -10 February 2017.
- Talk given at *Namik Kemal Pak Memorial Symposium*, METU Department of Physics, Ankara, 10 November 2016.

- *Constructing the Quantum Hall System on the Grassmannians $\mathbf{Gr}_2(\mathbb{C})^N$* talk given at *30th International Colloquium on Group Theoretical Methods in Physics* held at Ghent University, 14 - 18 July 2014, Ghent, Belgium.
- Participant at the conference *13th Workshop on Quantization Dualities and Integrable Systems*, held at Koc University, Istanbul, 21-22 April 2014.
- *Quantum Physics, Symmetries and Quantum Hall Effect* talk given at *Workshop on Recent Developments in High Energy Physics* held at Northern Cyprus Campus of Middle East Technical University, 28 May- 1 June 2013, Northern Cyprus.
- *Deconstructing Fuzzy Extra Dimensions* talk given at *12th Workshop on Quantization Dualities and Integrable Systems*, held at Koc University, Istanbul, 20-22 April 2013.
- *Equivariant Reduction of Gauge Theories over Fuzzy Extra Dimensions*, talk given at *Izmir High Energy Physics and Its Applications Workshop*, Izmir Institute of Technology, 19-23 June 2012, Izmir.
- *Equivariant Reduction of Gauge Theories over Fuzzy Extra Dimensions* talk given at *11th Workshop on Quantization Dualities and Integrable Systems*, held at Pamukkale University, Denizli, 21-23 April 2012.
- *Equivariant Reduction of Gauge Theories over Fuzzy Extra Dimensions*, talk given at *Quantum Theory and Symmetries 7 (QTS7)*, held at Prag, Czech Republic, 7-13 August, 2011.
- Participant at the conference *Strings, Branes and Supergravity* , held at Koc University, Istanbul, Turkey, 1-5 August 2011.
- *Dimensional Reduction of Yang-Mills Theories over Fuzzy Spaces and the Emergent Vortices and Fluxons*, talk given at the *5th International Workshop DICE 2010*, held at Castiglioncello, Tuscany, Italy, 13-17 September, 2010.
- Participant at the *Nordic String Meeting*, held at the Jacobs University, Bremen, Germany, 26-27 March, 2009.
- Participant at the conference *Quantum Spacetime and Noncommutative Geometry*, held at the University of Rome “La Sapienza”, Rome, Italy, 29 September-4 October, 2008.
- Participant at the conference *Strings 2008* held at CERN, Geneva, Switzerland, 18-23 August, 2008.
- *Noncommutative Nonlinear Systems and Integrability*, talk given at the *17th International Colloquium on Integrable Systems and Quantum Symmetries*, held at Prague, Czech Republic, 19-21 June, 2008.
- Participant at the *20th Workshop Beyond the Standard Model*, held at Physikzentrum Bad Honnef, Bad Honnef, Germany, 10-13 March 2008.
- *Towards A Theory of Gravity on Fuzzy Spaces*, talk given at the international conference, *Strings Noncommutativity and All That*, held at Hannover, Germany, 3-5 January 2008.

- *Quantum Aspects of the Noncommutative Sine-Gordon Model*, talk given at the 4th Vienna Central European Seminar on Particle Physics and Quantum Field Theory, Vienna, Austria, 30 November-2 December 2007. <http://www.univie.ac.at/vienna.seminar/2007/index.html>.
- Participant at the European Science Foundation Workshop on *Noncommutative Quantum Field Theory*, Erwin Schrödinger Institute for Mathematical Physics, Vienna, Austria, 26-29 November 2007.
- Invited seminar at *Università di Napoli Federico II, and INFN Napoli*, Napoli, Italy, 15 November 2007.
- Participant at the international conference *Noncommutative Spacetime Geometries* held at the University of Eastern Piedmont at Allessandria, Italy, 26-31 March 2007. Contributed with a poster presentation.
- *General Relativity with Fuzzy Spaces*, talk given at the 19th Workshop *Beyond the Standard Model*, held at Physikzentrum Bad Honnef, Bad Honnef, Germany, 12-15 March 2007.
- Participant at *LOR 2006: O’Raifeartaigh Symposium on Non-perturbative and Symmetry Methods in Field Theory*, held at KFKI Research Institute for Particle and Nuclear Physics, Budapest, Hungary, June 22-24, 2006, <http://www.kfki.hu/lor2006/>.
- Participant at the 13th *Irish Quantum Field Theory Meeting*, Dublin Institute for Advanced Studies, Dublin, Ireland, 12-13 May 2006.
- *Waves in Noncommutative Spacetime*, invited talk at the *International Conference on Noncommutative Geometry and Quantum Physics*, held at the S.N. Bose National Centre for Basic Sciences, Kolkata, India, 4-10 January 2006.
- *Waves on noncommutative spacetimes*, talk given at 12th *Irish Quantum Field Theory Meeting*, held at Trinity College Dublin, Ireland, 20-21 May 2005.
- Member of the organization committee and participant at the *Workshop on Causal Sets* held at Dublin Institute for Advanced Studies, Dublin, Ireland, 12-17 December 2004.
- *A Fuzzy Supersymmetric Non-linear Sigma Model*, talk given at the 26th Annual Montreal-Rochester-Syracuse-Toronto Conference on High Energy Physics, MRST 2004: Montreal, Canada, 12-14 May 2004.
- Participant at the Conference *Space-time and Fundamental Interactions: Quantum Aspects*, A conference to honour A. P. Balachandran’s 65th birthday, Vietri sul Mare, Salerno, Italy, 26-31 May 2003.
- *Edge Currents in Non-commutative Chern-Simons Theory*, talk given at the 25th Annual Montreal-Rochester-Syracuse-Toronto Conference on High Energy Physics, MRST 2003: A Tribute to Joe Schechter, Syracuse NY, USA, 13-15 May 2003.

SHORT TERM VISITS (ONE WEEK TO ONE MONTH)

- (Jan-Feb 2017) Institute for Mathematical Sciences (ICMAT), Madrid, Spain,
- (December 2015) Dublin Institute for Advanced Studies (DIAS) Dublin, Ireland.
- (October 2015) University of Zaragoza, Department of Theoretical Physics, Zaragoza, Spain.
- (August 2012) Leibniz University of Hannover, Institute for Theoretical Physics, Hannover, Germany.
- (Jan-Feb 2012) University Carlos III Madrid, Department of Mathematics, Madrid, Spain.
- (January 2012) François Rabelais University (University of Tours), Physics Department, Tours, France.
- (September 2011) Syracuse University, Physics Department, Syracuse, NY, USA.
- (June 2009) Feza Gursev Institute, Istanbul, Turkey.
- (July 2008) Dublin Institute for Advanced Studies. Dublin, Ireland.
- (July 2007) Comenius University, Bratislava, Slovakia.
- (July 2005) Institute of Mathematical Sciences (IMSc), Chennai, India.
- (June 2005) Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV) México D.F.
- (Nov-Dec 2003) Raman Research Institute (RRI), Bangalore, India.
- (Sept 2003) Dublin Institute for Advanced Studies (DIAS) Dublin, Ireland.
- (June 2003) Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV) México D.F.
- (June 2001) Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV) México D.F.
- (March 2001) Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV) México D.F.

SPECIALIZED SKILLS

- Knowledge of \LaTeX , Linux, Mac OS X, Mathematica, Maple and Windows.

CITIZENSHIP

- Turkish.

LANGUAGES

- Turkish (Native)
- English (Fluent)
- German (Elementary)

GENDER

- Male.

DATE OF BIRTH

- 11 October 1975.