

# Özer Özdal

Ph.D. Candidate

## Contact Information

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## Personal Information

Date of birth  
28/05/1990  
Place of birth  
Izmir, Turkey

## Languages

Native Turkish  
Advanced English  
Beginner French

## Programming

FORTRAN, PYTHON,  
MATLAB, C++,  
Bash shell scripting,  
MATHEMATICA, LaTeX

## Research interests

Particle Physics Phenomenology  
Beyond the Standard Model Phenomenology  
Supersymmetric Extensions of the Standard Model  
Dark Matter in Supersymmetric and Non-supersymmetric Models  
LHC Phenomenology  
Grand Unified Theories  
Electroweak Symmetry Breaking

## Education

- 2019-2020 **Visiting Ph.D. Student** NExT Institute & University of Southampton  
*Compressed Supersymmetric Spectra at the Large Hadron Collider (LHC)*  
Host Supervisor: Prof. Stefano Moretti
- since 2016 **Ph.D. candidate in Physics** Concordia University  
*Beyond Standard Model scenarios at LHC: dark matter,  $W'$  &  $Z'$  mass limits*
- 2016-2017 **Inter-University Transfer Student** McGill University  
*Physics 610 Quantum Field Theory I given by Prof. Simon Caron-Huot*  
*Physics 673 Quantum Field Theory II given by Prof. Alexander Maloney*
- 2014-2016 **M.Sc. in Physics** Izmir Institute of Technology  
*The Higgs boson and right-handed neutrinos in supersymmetric models*
- 2009-2014 **B.Sc. in Physics (Ranked 3rd)** Izmir Institute of Technology  
*Revisiting N-symmetric barrier tunneling in Quantum Mechanics*

## Experience

- Since 2016 **Concordia University** Teaching Assistant (TA)  
*PHYS 204: Mechanics (Tutor, 2019 Summer)*  
*PHYS 367: Modern Physics and Relativity (Tutor, 2019 Winter)*  
*PHYS 245: Classical Mechanics (Tutor, 2018 Fall)*  
*PHYS 224: Introductory Experimental Mechanics (Lab Assistant)*  
*PHYS 252: Optics (2017 Winter, 2018 Winter)*  
*PHYS 236: Numerical Analysis in Physics (2016 Fall, 2017 Fall)*
- Since 2016 **Concordia University** Research Fellow  
*Mariana Frank Research Group*
- 2015-2016 **TUBITAK Project No: 114F461** Research Fellow  
*Muon Anomalous Magnetic Moment and Yukawa Quasi-Unification in Supersymmetric Models*  
*Under the supervision of Assoc. Prof. Cem Salih Ün*
- 2012-2012 **Koç University, Mechanical Characterization Lab** Internship  
*Vibration modeling in nanowire resonators with mechanical coupling*  
*Under the supervision of Assoc. Prof. Erdem Alaca*

## Publications

2020	<b>Leptophobic <math>Z'</math> bosons in the secluded <math>U(1)'</math> model</b>	arXiv:2005.08472
2020	<b>E6 motivated UMSSM confronts experimental data</b>	J. High Energ. Phys. 2020, 123 (2020)
2019	<b>Natural Dark Matter and light bosons in an alternative left-right symmetric model</b>	J. High Energ. Phys. 2020, 116 (2020)
2019	<b>Relaxing LHC constraints on the <math>W_R</math> mass</b>	Phys. Rev. D 99, 035001
2018	<b>Exploring the supersymmetric <math>U(1)_{B-L} \times U(1)_R</math> model with dark matter, muon <math>g-2</math>, and <math>Z'</math> mass limits</b>	Phys. Rev. D 97, 015012
2017	<b>Muon <math>g-2</math> in an alternative quasi-Yukawa unification with a less fine-tuned seesaw mechanism</b>	Phys. Rev. D 97, 055007
2016	<b>The Higgs boson and right-handed neutrinos in supersymmetric models</b>	IZTECH Theses & Dissertations
2016	<b>Mass spectrum and Higgs profile in B-L symmetric SSM</b>	Phys. Rev. D 93, 055024

## Activities

2015	<b>Introduction to Supersymmetry Summer School</b> (2015, September 7-11)	Boğaziçi University
2015	<b>METU HEP Days</b> (2015, February 12-14)	METU
2014	<b>Cosmology and Astroparticle Physics Summer School</b> (2014, September 1-12)	Boğaziçi University
2014	<b>Differential Geometry and Topological Methods in Physics Summer School</b> (2014, August 25-29)	Boğaziçi University
2014	<b>Computational Techniques for Physicists and Astronomers Summer School</b> (2014, August 13-22)	Boğaziçi University
2014	<b>Winter School on Computer Applications in Accelerator and Particle Physics</b> (2014, February 3-10)	Gaziosmanpaşa University
2013	<b>Physics for Astronomers</b> (2013, September 2-6)	Boğaziçi University
2013	<b>Cosmology Summer School</b> (2013, August 19-30)	Boğaziçi University
2010	<b>Istanbul University 27th International Physics Congress</b> (2010, September 14-17)	Istanbul University

## Presentations

- 2019      **University of Southampton** (Oral Presentation) (2019, November 26)  
Title: Relaxing LHC constraints on the  $W'$  mass, and natural Dark Matter  
University of Southampton
- 2019      **NExT Meeting at Sussex** (Oral Presentation) (2019, November 20)  
Title:  $W'$  models at the LHC  
University of Sussex
- 2019      **Higgs Couplings Workshop, Oxford, UK** (Oral Presentation) (2019, September 30 - October 4)  
Title: Mass spectrum and Higgs profile in B-L symmetric SSM  
Higgs Couplings 2019
- 2019      **2019 XIth International Symposium: Quantum Theory and Symmetries (QTS)** (Oral Presentation) (2019, 1-5 July)  
Title: Relaxing LHC constraints on the  $W_R$  mass  
QTS 2019
- 2018      **2018 Phenomenology Symposium, Pittsburgh, USA** (Oral Presentation) (2018, 7-9 May)  
Title: Naturalness and dark matter in supersymmetric  $U(1)_{B-L} \times U(1)_R$  model  
Pheno 2018
- 2018      **Winter Nuclear and Particle Physics Conference** (Oral Presentation) (2018, 15-18 February)  
Title: Exploring the supersymmetric  $U(1)_{B-L} \times U(1)_R$  model  
WNPPC 2018
- 2015      **First Joint METU-IPM Conference on LHC Physics** (Poster presentation) (2015, September 29–October 3)  
Title: Higgs Anomalies in SUSY B-L Model  
ICTP-ECAR
- 2014      **Turkish Physical Society 31th International Physics Congress** (Poster presentation - 2014, July 21-24)  
Title: Revisiting N-symmetric barrier tunneling in Quantum Mechanics  
TFD-31
- 2014      **Izmir Solid State Physics Meeting** (Poster presentation) (2014, April 11)  
Title: Revisiting N-symmetric barrier tunneling in Quantum Mechanics  
IZTECH

## On-going Studies

- 1)      **Correlating  $W'$  and  $Z'$  gauge boson mass limits in general extensions of the Standard Model**  
Collaboration with Prof. Benjamin Fuks, Prof. Stefano Moretti and Prof. Mariana Frank

## Awards

2019	<b>Mitacs Globalink Research Award</b>	Mitacs
2016	<b>Concordia International Tuition Award of Excellence</b>	Concordia University
2014	<b>B.Sc. in Physics 3rd Ranked Award</b>	Izmir Institute of Technology

## References

- 1) **Prof. Mariana Frank**  
Professor in Physics  
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- 2) **Prof. Benjamin Fuks**  
Professor in Physics  
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- 3) **Prof. Stefano Moretti**  
Professor in Physics  
School of Physics and Astronomy  
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- 4) **Prof. Poulouse Poulouse**  
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- 5) **Assoc. Prof. Cem Salih Ün**  
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- 6) **Prof. Durmuş Ali Demir**  
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