

# Soner Albayrak

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## ACADEMIC AND PROFESSIONAL PREPARATION

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<b>Yale University, New Haven, CT</b>	2016-2021
Doctor of Philosophy in Physics	(Advisor: David Poland)
Dissertation title: <i>Analytical &amp; Numerical Studies in Fermion Conformal Bootstrap</i>	
Master of Philosophy in Physics	
Master of Science in Physics	
<b>California Institute of Technology, Pasadena, CA</b>	2018-2019
Visiting Student Researcher	(Host: David Simmons Duffin)
Simons Bootstrap Collaboration Graduate Student Exchange	
<b>Middle East Technical University, Ankara, Turkey</b>	2008-2016
Master of Science in Physics	(Advisor: İsmail Turan)
Thesis: <i>A Lorentz Violating Theory: Its Nonminimal Extension in the Photon Sector</i>	
Bachelor of Science in Physics	
Bachelor of Science in Electrical & Electronics Engineering	

## CURRENT RESEARCH INTERESTS

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Conformal bootstrap	AdS/CFT
Cosmological bootstrap	Scattering amplitudes

## PUBLICATIONS

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- S. Albayrak**, C. Chowdhury and S. Kharel, *On loop celestial amplitudes for gauge theory and gravity*, [arXiv:2007.09338 \[hep-th\]](https://arxiv.org/abs/2007.09338) (submitted to PRD)
- S. Albayrak** and S. Kharel, *On spinning loop amplitudes in Anti-de Sitter space*, [arXiv:2006.12540 \[hep-th\]](https://arxiv.org/abs/2006.12540) (submitted to PRD)
- S. Albayrak**, D. Meltzer and D. Poland, *The Inversion Formula and 6j Symbol for 3d Fermions*, [arXiv:2006.07374 \[hep-th\]](https://arxiv.org/abs/2006.07374) (accepted to JHEP)
- S. Albayrak**, C. Chowdhury and S. Kharel, *Study of momentum space scalar amplitudes in AdS spacetime*, [Phys.Rev.D 101 \(2020\) 12](https://arxiv.org/abs/2006.07374)
- S. Albayrak** and S. Kharel, *Towards the higher point holographic momentum space amplitudes. Part II. Gravitons*, [JHEP 12 \(2019\) 135](https://arxiv.org/abs/1905.08240)
- S. Albayrak**, C. Chowdhury and S. Kharel, *New relation for Witten diagrams*, [JHEP 10 \(2019\) 274](https://arxiv.org/abs/1905.08240)
- S. Albayrak**, D. Meltzer and D. Poland, *More Analytic Bootstrap: Nonperturbative Effects and Fermions*, [JHEP 08 \(2019\) 040](https://arxiv.org/abs/1905.08240)
- S. Albayrak** and S. Kharel, *Towards the higher point holographic momentum space amplitudes*, [JHEP 02 \(2019\) 040](https://arxiv.org/abs/1905.08240)
- S. Albayrak**, *A Lorentz Violating Theory: Its Nonminimal Extension in the Photon Sector* (Master thesis), [arXiv:1602.07676 \[hep-ph\]](https://arxiv.org/abs/1602.07676)
- S. Albayrak** and İ. Turan, *CPT-odd Photon in Vacuum-Orthogonal Model*, [arXiv:1505.07584 \[hep-ph\]](https://arxiv.org/abs/1505.07584)

## CONFERENCES & PRESENTATIONS

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Bootstrap 2020, online conference	Jun 2020
Zoomplitudes 2020, online conference	May 2020
Online seminar series in theoretical physics in Turkey Talk: <i>Recent Developments in Conformal Bootstrap</i>	May 2020
Developments in the Numerical Bootstrap, SCGP-Stony Brook	Nov 2019
Bootstrap 2019, Perimeter Institute	Jul 2019
Bootstrap 2018, California Institute of Technology	Jul 2018
Analytic approaches to the bootstrap, Azores	May 2018
Particle theory group student talk: <i>On Wess-Zumino-Witten model</i> , Yale	Mar 2018
Signals for Nonminimal Lorentz and CPT Violation, IUCSS Poster presentation: <i>CPT-odd Photon in Vacuum-Orthogonal Model</i>	Jun 2015
Ankara High Energy Physics Days, METU Talk: <i>CPT Violating QED and Beyond</i>	Feb 2015
Recent Developments in High Energy Physics, METU	May 2013

## AWARDS AND SCHOLARSHIPS

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National Graduate Study Scholarship <i>by Scientific and Technological Research Council of Turkey</i>	2014
Graduate Courses Performance Award <i>by Middle East Technical University</i>	2014
Dean's Honor and High Honor Lists	2009-2013
Outstanding Success Scholarship's <i>by METU, by Turkish Educational Foundation, and by Ministry of Youth and Sports</i>	2008

## EXPERIENCE

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<b>Teaching Assistant</b> , Yale University	2017-2020
PHYS 181: <i>University Physics</i>	Spring 2018, Spring 2020
PHYS 180: <i>University Physics</i>	Fall 2017, Fall 2019, Fall 2020
PHYS 166L: <i>General Physics Laboratory</i>	Spring 2017
<b>Teaching Assistant</b> , Middle East Technical University	2014-2016
PHYS 502: <i>Analytical Mechanics</i>	Fall 2015, Spring 2016
PHYS 408: <i>Particle Physics II</i>	Spring 2015, Spring 2016
PHYS 407: <i>Particle Physics I</i>	Fall 2014, Fall 2015
PHYS 311: <i>Classical Mechanics</i>	Fall 2014, Spring 2015, Fall 2015, Spring 2016
PHYS 105 - LAB: <i>General Physics I</i>	Fall 2014
<b>Intern</b> , PROMOD R&D Software, Ankara <i>worked for object tracking and camera calibration problems</i>	Jul & Aug 2013
<b>Intern</b> , SÖKTAŞ Textile, Aydın <i>worked in the control department</i>	Aug & Sep 2012

## REFERENCES

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Available upon request