

# 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 JHEP)
- 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
Seminars in theoretical physics, unofficial seminar series 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
Journal club 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