# Soner Albayrak

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#### **ACADEMIC POSITIONS**

### University of Amsterdam, Amsterdam, Netherlands

 $2021\hbox{-}present$ 

Onderzoeker (Researcher)

(Contact: Daniel Baumann)

#### Academic and Professional Preparation

#### Yale University, New Haven, CT

2016-2021

Doctor of Philosophy in Physics (Advisor: David Poland)

Dissertation title: Analytical Studies in the Fermion Conformal Bootstrap

Master of Philosophy in Physics Master of Science in Physics

#### California Institute of Technology, Pasadena, CA

2018-2019

Visiting Student Researcher (Host: David Simmons Duffin)

Simons Bootstrap Collaboration Graduate Student Exchange

#### Middle East Technical University, Ankara, Turkey

2008-2016

Master of Science in Physics (Advisor: İsmail Turan)

Thesis: A Lorentz Violating Theory: Its Nonminimal Extension in the Photon Sector

Bachelor of Science in Physics

Bachelor of Science in Electrical & Electronics Engineering

#### **Publications**

- **S. Albayrak**, S. Kharel and D. Meltzer, On duality of color and kinematics in (A)dS momentum space, arXiv:2012.10460 [hep-th] (accepted to JHEP)
- **S. Albayrak**, C. Chowdhury and S. Kharel, *On loop celestial amplitudes for gauge theory and gravity*, Phys.Rev.D 102 (2020)
- **S. Albayrak** and S. Kharel, *Spinning loop amplitudes in Anti-de Sitter space*, Phys.Rev.D 103 (2021) 2
- **S. Albayrak**, D. Meltzer and D. Poland, *The Inversion Formula and 6j Symbol for 3d Fermions*, JHEP 09 (2020) 148
- **S. Albayrak**, C. Chowdhury and S. Kharel, *Study of momentum space scalar amplitudes in AdS spacetime*, Phys.Rev.D 101 (2020) 12
- **S. Albayrak** and S. Kharel, *Towards the higher point holographic momentum space amplitudes. Part II. Gravitons*, JHEP 12 (2019) 135
- **S. Albayrak**, C. Chowdhury and S. Kharel, *New relation for Witten diagrams*, JHEP 10 (2019) 274
- **S. Albayrak**, D. Meltzer and D. Poland, *More Analytic Bootstrap: Nonperturbative Effects and Fermions*, JHEP 08 (2019) 040

- **S. Albayrak** and S. Kharel, *Towards the higher point holographic momentum space amplitudes*, JHEP 02 (2019) 040
- **S.** Albayrak, A Lorentz Violating Theory: Its Nonminimal Extension in the Photon Sector (Master thesis), arXiv:1602.07676 [hep-ph]
- **S. Albayrak** and İ. Turan, *CPT-odd Photon in Vacuum-Orthogonal Model*, arXiv:1505.07584 [hep-ph]

#### CURRENT RESEARCH INTERESTS

Conformal bootstrap Cosmological bootstrap	AdS/CFT Scattering amplitudes	
Cosmological bootstrap	Scattering amplitudes	
Conferences & Presentations		
Bootstrap 2021, online conference		Jul 2021
19 <sup>th</sup> Workshop on Quantization, Dualitic Talk: <i>Fermions in CFTs: The Analytic</i>	,	Apr 2021
THK University, online seminar Invited Talk: Simetriler: Niçin evrenimiz böyle?		Mar 2021
Porto University, online seminar Invited Talk: <i>On Witten diagrams in n</i>	nomentum space	Feb 2021
Bootstrap 2020, online conference		Jun 2020
Middle East Technical University, online Invited Talk: Recent Developments in		Nov 2020
Zoomplitudes 2020, online conference		May 2020
Online seminar series in theoretical physics in Turkey Talk: Recent Developments in Conformal Bootstrap		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: On Wess-Zumino-Witten model, Yale		Mar 2018
Signals for Nonminimal Lorentz and CPT Violation, IUCSS Poster presentation: CPT-odd Photon in Vacuum-Orthogonal Model		Jun 2015
Ankara High Energy Physics Days, METU Talk: CPT Violating QED and Beyond		Feb 2015
Recent Developments in High Energy Physics, METU		May 2013

### Awards and Scholarships

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

### Experience

Teaching Assistant, Yale University	2017-2021	
PHYS 181: University Physics	Spring 2018, Spring 2020, Spring 2021	
PHYS 180: University Physics	Fall 2017, Fall 2019, Fall 2020	
PHYS 166L: General Physics Laborato	ry Spring 2017	
Teaching Assistant, Middle East Technic	cal University 2014-2016	
PHYS 502: Analytical Mechanics	Fall 2015, Spring 2016	
PHYS 408: Particle Physics II	Spring 2015, Spring 2016	
PHYS 407: Particle Physics I	Fall 2014, Fall 2015	
PHYS 311: Classical Mechanics	Fall 2014, Spring 2015, Fall 2015, Spring 2016	
PHYS 105 - LAB: General Physics I	Fall 2014	
Intern, PROMOD R&D Software, Ankar	, 0	
worked for object tracking and camera Intern, SÖKTAŞ Textile, Aydın worked in the control department	calibration problems  Aug & Sep 2012	

## References

Available upon request