

Soner Albayrak

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ACADEMIC POSITIONS

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| National Taiwan University, Taipei, Taiwan Visiting Researcher | Apr 2023 - present (Contact: Yu-tin Huang) |
| University of Amsterdam, Amsterdam, Netherlands Onderzoeker (Researcher) | Sep 2021 - present (Contact: Daniel Baumann) |

ACADEMIC AND PROFESSIONAL PREPARATION

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| Yale University, New Haven, USA Doctor of Philosophy in Physics Dissertation title: <i>Analytical Studies in the Fermion Conformal Bootstrap</i> Master of Philosophy in Physics Master of Science in Physics | Agu 2016 - Jun 2021 (Advisor: David Poland) |
| California Institute of Technology, Pasadena, USA Visiting Student Researcher Simons Bootstrap Collaboration Graduate Student Exchange | Jul 2018 - Jun 2019 (Host: David Simmons Duffin) |
| Middle East Technical University, Ankara, Turkey Master of Science in Physics 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 | Sep 2008 - Feb 2016 (Advisor: İsmail Turan) |

CURRENT RESEARCH INTERESTS

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| Conformal bootstrap | AdS/CFT |
| Cosmological bootstrap | Scattering amplitudes |

PEER REVIEWED PUBLICATIONS

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- S. Albayrak**, Rajeev Erramilli, Zhijin Li, David Poland and Yuan Xin, *Bootstrapping $N_f = 4$ conformal QED₃*, [Phys.Rev.D 105 \(2022\)](#)
- S. Albayrak**, S. Kharel and D. Meltzer, *On duality of color and kinematics in (A)dS momentum space*, [JHEP 03 \(2021\) 249](#)
- 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](#)

CONFERENCES & PRESENTATIONS

| | |
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| Middle East Technical University, seminar Invited Talk: <i>Extending the flat space techniques to curved spacetimes</i> | Mar 2023 |
| University of Amsterdam String Theory Journal Club Talk: <i>Conformal QED in 3d: The Numerical Bootstrap Approach</i> | Feb 2023 |
| Positivity, Princeton Center for Theoretical Science | Dec 2022 |
| Bootstrapping Nature, Galileo Galilei Institute Invited Talk: <i>Inverting the 3d Fermions</i> | Nov 2022 |
| ATITPhysics 2022S, online school Colloquium: <i>Problems in Theoretical Physics</i> | Sep 2022 |
| Middle East Technical University, online seminar Invited Talk: <i>Conformal QED in 3d: The Numerical Bootstrap Approach</i> | Jun 2022 |
| 20 th Workshop on Quantization, Dualities and Integrable Systems, online seminar Talk: <i>Conformal QED in 3d: The Numerical Bootstrap Approach</i> | Apr 2022 |
| Holography@D-ITP meetings, Utrecht University Invited Talk: <i>Conformal QED in 3d: The Numerical Bootstrap Approach</i> | Apr 2022 |
| Case Western Reserve University, online seminar Invited Talk: <i>Conformal QED in 3d: The Numerical Bootstrap Approach</i> | Apr 2022 |
| Boundaries and Defects in CFT and Holography, online school | Mar 2022 |
| ICTP – School on Superstring Theory and Related Topics, online school | Oct 2021 |
| University of Amsterdam String Theory Journal Club Talk: <i>Fermions in CFTs: The Analytic Bootstrap Approach</i> | Oct 2021 |
| International Society for Quantum Gravity, online meeting | Oct 2021 |

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| All Lambdas Holography @ Prague, online workshop | Oct 2021 |
| ATITPhysics 2021, online school | Sep 2021 |
| Lecture Series: <i>Conformal Symmetry in Field Theories</i> | |
| Bootstrap 2021, online conference | Jul 2021 |
| 19 th Workshop on Quantization, Dualities and Integrable Systems, online seminar | Apr 2021 |
| Talk: <i>Fermions in CFTs: The Analytic Bootstrap Approach</i> | |
| THK University, online seminar | Mar 2021 |
| Invited Talk: <i>Simetriler: Niçin evrenimiz böyle?</i> | |
| Porto University, online seminar | Feb 2021 |
| Invited Talk: <i>On Witten diagrams in momentum space</i> | |
| Bootstrap 2020, online conference | Jun 2020 |
| Middle East Technical University, online seminar | Nov 2020 |
| Invited Talk: <i>Recent Developments in Conformal Bootstrap</i> | |
| Zoomplitudes 2020, online conference | May 2020 |
| Online seminar series in theoretical physics in Turkey | May 2020 |
| Talk: <i>Recent Developments in Conformal Bootstrap</i> | |
| 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 | Jun 2015 |
| Poster presentation: <i>CPT-odd Photon in Vacuum-Orthogonal Model</i> | |
| Ankara High Energy Physics Days, METU | Feb 2015 |
| Talk: <i>CPT Violating QED and Beyond</i> | |
| Recent Developments in High Energy Physics, METU | May 2013 |

AWARDS AND SCHOLARSHIPS

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

EXPERIENCE

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|---|--|
| Teaching Assistant, Yale University | 2017-2021 |
| PHYS 181: <i>University Physics</i> | Spring 2018, Spring 2020, Spring 2021 |
| PHYS 180: <i>University Physics</i> | Fall 2017, Fall 2019, Summer 2020, Fall 2020 |
| PHYS 166L: <i>General Physics Laboratory</i> | Spring 2017 |
| Teaching Assistant, 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 |
| Intern, PROMOD R&D Software, Ankara | Jul & Aug 2013 |
| <i>worked for object tracking and camera calibration problems</i> | |
| Intern, SÖKTAŞ Textile, Aydın | Aug & Sep 2012 |
| <i>worked in the control department</i> | |

OTHER ACTIVITIES

- Member, *University Forum (UVA)*
- Organizer, *ATITPhysics Online School Series*
- Advising Committee, *Joint Seminar Series in Theoretical Physics (Boun&METU&UTAA)*
- Physics Outreach (in Turkish), *Evrin Ağacı*

REFERENCES

Available upon request