

Soner Albayrak

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ACADEMIC AND PROFESSIONAL PREPARATION

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| Yale University, New Haven, CT | 2016-2021 |
| Doctor of Philosophy in Physics | (Advisor: David Poland) |
| Dissertation title: <i>Analytical & Numerical Studies in Fermion Conformal Bootstrap</i> | |
| 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: <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 | |

RESEARCH INTERESTS

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

PUBLICATIONS

- 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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|------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Teaching Assistant , 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 |
| 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 <i>worked for object tracking and camera calibration problems</i> | Jul & Aug 2013 |
| Intern , SÖKTAŞ Textile, Aydın <i>worked in the control department</i> | Aug & Sep 2012 |

REFERENCES

Available upon request