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Meir Shimon

Curriculum Vitae

Personal

Born: January 16, 1970, Ramat-Gan, Israel,

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Education

- 1998-2005: PhD in Physics “Physical Processes in Clusters of Galaxies”, advised by Yoel Rephaeli, Tel-Aviv University
- 1994-1998: MSc in Physics, “Aspects of 2+1 Dimensional Gravity”, advised by Larry P. Horwitz, Tel-Aviv University
- 1991-1994: BSc. in Physics, Tel-Aviv University

Employment

- 2010-present: Research Associate, Tel-Aviv University
- 2005-2010: CASS Postdoctoral Fellow, UC San Diego
- 2004-2005: Teaching assistant, Tel-Aviv University
- 1995-2003: Teaching assistant, Tel-Aviv University

Membership in CMB Projects

- POLARBEAR ¹
- EPIC ²
- CMBPol ³

Prizes and Fellowships

- Inaugural CASS Director's Postdoctoral Fellow, 2008-2009
- The Dan David PhD Scholarship Prize, 2003

Publications

1. '*Generalized Law of Addition of Accelerations*', Shimon, M., 1999, PRD, **59**, 067501.
2. '*Cosmic Microwave Background Comptonization by Energetic Nonthermal Electrons in Clusters of Galaxies*', Shimon, M. & Rephaeli, Y., 2002, ApJ, **575**, 12.
3. '*Cosmic Microwave Background Temperature at Galaxy Clusters*', Battistelli et al. 2002, ApJ, **580**, L101.
4. '*Triple Experiment Spectrum of the Sunyaev-Zeldovich Effect in the Coma Cluster: H_0* ', Battistelli et al. 2003, ApJ, **598**, L75.
5. '*Quantitative Description of the Sunyaev – Zeldovich Effect: Analytic Approximations*', Shimon, M. & Rephaeli, Y., 2004, New Astronomy, **9**, 69.
6. '*Cosmic Microwave Background Polarization due to Scattering in Clusters*', Shimon, M., Rephaeli, Y., O'Shea, B. W., & Norman, M. L. 2006, MNRAS, **368**, 511
7. '*Modeling Integrated Properties and the Polarization of the Sunyaev-Zeldovich Effect*', Rephaeli, Y., Sadeh, S., & Shimon, M. 2006, New Astronomy Review, **51**, 350

¹<http://bolo.berkeley.edu/polarbear>

²<http://arxiv.org/abs/0906.1188>

³<http://cmbpol.uchicago.edu/>

8. '*CMB Polarization Systematics due To Beam Asymmetry: Impact on Inflationary Science*', Shimon, M., Keating, B., Ponthieu, N., & Hivon, E. 2008, PRD, **77**, 083003
9. '*CMB Beam Systematics: Impact on Lensing Parameter Estimation*', Miller, N. J., Shimon, M., & Keating, B. G. 2009, PRD, **79**, 063008
10. '*CMB Polarization Systematics due to Beam Asymmetry: Impact on Cosmological Birefringence*', Miller, N. J., Shimon, M., & Keating, B. G. 2009, PRD, **79**, 103002
11. '*Power Spectra of CMB Polarization by Scattering in Clusters*', Shimon, M., Rephaeli, Y., Sadeh, S., & Keating, B. 2009, MNRAS, **399**, 2088
12. '*Redshift Dependence of the CMB Temperature from S-Z Measurements*', Luzzi, G., Shimon, M., Lamagna, L., Rephaeli, Y., De Petris, M., Conte, A., De Gregori, S., & Battistelli, E. S. 2009, ApJ, **705**, 1122
13. '*Neutrino Masses, Lepton Asymmetry and CMB Lensing*', Miller, N. J., Shimon M., Kishimoto C. T., Smith C. J., Fuller G. M., Keating B. G., 2010, JCAP, **5**, 37
14. '*Neutrino Mass Inference from SZ Surveys*', Shimon, M., Sadeh, S., & Rephaeli, Y. 2011, MNRAS, **412**, 1895
15. '*Impact of Instrumental Systematics on the CMB Bispectrum*', Su, M., Yadav, A. P. S., Shimon, M., & Keating, B. G. 2011, PRD, **83**, 103007
16. '*Estimating the SZ Effect Using a Merger-Tree Model of Cluster Formation*', Dvorkin, I., Rephaeli, Y., & Shimon, M. 2012, MNRAS, **421**, 2648
17. '*Constraints on the Neutrino Mass from SZ Surveys*', Shimon, M., Rephaeli, Y., Itzhaki, N., Dvorkin, I., & Keating, B. G. 2012, MNRAS, **427**, 828
18. '*Revealing Cosmic Rotation*', Yadav, A. P. S., Shimon, M., & Keating, B. G. 2012, PRD, **86**, 083002
19. '*CMB Anisotropy Due to Filamentary Gas: Power Spectrum and Cosmological Parameter Bias*', Shimon, M., Sadeh, S., & Rephaeli, Y. 2012, JCAP, **10**, 38
20. '*Self-Calibration of CMB Polarization Experiments*', Keating, B. G., Shimon, M., & Yadav, A. P. S. 2013, ApJL, **762**, L23

21. '*Bias-Limited Extraction of Cosmological Parameters*', Shimon, M., Itzhaki, N., & Rephaeli, Y. 2013, JCAP, **3**, 9
22. '*Tangential Velocity of the Dark Matter in the Bullet Cluster from Precise Lensed Image Redshifts*', Molnar, S., Broadhurst, T., Umetsu, K., Zitrin, A., Rephaeli, Y., & Shimon, M. 2013, ApJ, **774**, 70
23. '*Evidence for Gravitational Lensing of the Cosmic Microwave Background Polarization from Cross-correlation with the Cosmic Infrared Background*', POLARBEAR Collaboration, 2014, (arXiv:1312.6645) accepted for publication in PRL
24. '*Self-Calibration of BICEP1 Three-Year Data and Constraints on Astrophysical Polarization Rotation*', Kaufman, J. P., et al., 2014, (arXiv:1312.7877) accepted for publication in PRD

Papers Submitted for Publication

1. '*Gravitational Lensing of Cosmic Microwave Background Polarization*', POLARBEAR Collaboration, (arXiv:1312.6646)
2. '*A Measurement of the Cosmic Microwave Background B-Mode Polarization Power Spectrum at Sub-Degree Scales with POLARBEAR*', POLARBEAR Collaboration, (arXiv:1403.2369)

White Papers

1. '*CMBPol Mission Concept Study: Gravitational Lensing*', Smith, K. M. et al., arXiv:0811.3916
2. '*Study of the Experimental Probe of Inflationary Cosmology (EPIC) – Intermediate Mission for NASA's Einstein Inflation Probe*', Bock, J., et al., arXiv:0906.1188

Proceedings Papers

1. '*Cosmic microwave background temperature evolution by Sunyaev – Zel'dovich effect observations*', Battistelli, E. S. et al. 2003, Memorie della Societa Astronomica Italiana, 74, 316.
2. '*The Sunyaev-Zeldovich Effect*', Rephaeli, Y., Sadeh, S., & Shimon, M. 2005, Background Microwave Radiation and Intracluster Cosmology, 57

3. ‘*The new generation CMB B-mode polarization experiment: POLARBEAR*’, The Polarbear Collaboration, Errard, J., Ade, P. A. R., et al. 2010, 2010 Rencontres de Moriond proceedings, arXiv:1011.0763
4. ‘*Ultra High Energy Cosmology with POLARBEAR*’, Keating, B., Moyerman, S., Boettger, D., et al. 2011, DPF 2011 conference proceedings, arXiv:1110.2101
5. ‘*The POLARBEAR Experiment*’, Kermish, Z. D., Ade, P., Anthony, A., et al. 2012, SPIE proceedings, 8452, arXiv:1210.7768
6. ‘*The bolometric focal plane array of the Polarbear CMB experiment*’, Arnold, K., Ade, P. A. R., Anthony, A. E., et al. 2012, SPIE proceedings, 8452, arXiv:1210.7877

Selected Talks

1. ‘*Bias-Limited Extraction of Cosmological Parameters*’, 2013, Weizmann Inst., Princeton, Johns Hopkins Uni.
2. ‘*Constraints on the Neutrino Mass from SZ Surveys*’, 2012, BGU, Technion
3. ‘*SZ Number Counts and Power Spectrum: Neutrino Mass Constraints and Bias of Cosmological Parameters*’, 2012, TAU
4. ‘*Forecasts for Neutrino Mass Constraints from SZ Surveys*’, 2011, HUJI, TAU, Technion
5. ‘*Constraining Neutrino Masses and Degeneracy Parameters with Future CMB Experiments*’, 2010, Arizona State Univ., UCSD, University of Arizona
6. ‘*CMB and Fundamental Physics*’, 2009, UC Berkeley, BGU, HUJI, UC Irvine, TAU, Weizmann Inst.
7. ‘*Cosmology with the SZ Effect*’, 2008, Enrico Fermi School, HUJI, Weizmann Inst.
8. ‘*In-depth Introduction to CMB Lensing*’, 2008, UCSD
9. ‘*CMB Polarization Systematics Due to Beam Asymmetry: Impact on Inflationary Science*’, ‘Cosmic Cartography’ Chicago Univ. (2007), Aspen Center for Physics (2008)