




## Maria Salatino

Physical Science Research Scientist

Kavli Institute for Particle Astrophysics and Cosmology

 Curriculum Vitae available Online

### Bio

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#### BIO

##### Research Interests

- \* Instrumentation and technology for astrophysics and cosmology in the mm and sub-mm bands.
- \* Polarization of the Cosmic Microwave Background (CMB) and of the emission from interstellar dust.
- \* Superconducting detectors for mm and sub-mm bands, detectors cameras.
- \* Cryogenic polarization modulators.
- \* Mechanical design, finite element analysis, design of printed circuit boards.
- \* Data analysis, simulation, programming.
- \* Systematics in CMB polarimeters and large focal planes.

##### Research Collaborations

- \* ALiCPT
- \* Atacama Cosmology Telescope
- \* Simons Observatory
- \* PILOT
- \* CMB-S4
- \* QUBIC

#### ACADEMIC APPOINTMENTS

- Phys Sci Res Assoc, Kavli Institute for Particle Astrophysics and Cosmology

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Reviewer, NASA APRA (2015 - 2015)
- Organizer special session 'Superconducting Applications for Cosmological Research', Applied Superconductivity Conference 2018 (2018 - 2018)
- Referee, Applied Thermal Engineering (2018 - present)
- Program Committee Member, Applied Superconductivity Conference 2018 (2018 - 2018)
- Reviewer, NASA APRA (2018 - 2018)
- Referee, IEEE Transactions on Applied Superconductivity (2017 - present)
- Referee, 28th International Conference on Low Temperature Physics (2017 - present)

- Referee, Journal of Low Temperature Physics (2016 - present)
- Referee, Applied Physics Research (2016 - present)

## PROFESSIONAL EDUCATION

- PhD, Sapienza University of Rome , Astronomy (2011)

## LINKS

- Professional website: <https://sites.google.com/site/mariasalatinou2cmb/>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Development of the AliCPT-1 cryostat.

### PROJECTS

- Atacama Cosmology Telescope - Advanced ACTPol
- AliCPT
- Simons Observatory
- CMB-S4
- QUBIC
- PILOT

## Publications

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### PUBLICATIONS

- **Machine Learning, Markov Chain Monte Carlo, and Optimal Algorithms to Characterize the AdvACT Kilopixel Transition-Edge Sensor Arrays** *IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY*  
Salatino, M., Austermann, J., Beall, J. A., Choi, S., Crowley, K. T., Duff, S., Henderson, S. W., Hilton, G., Ho, S. P., Hubmayr, J., Li, Y., Niemack, M. D., Simon, et al  
2019; 29 (5)
- **The Simons Observatory: science goals and forecasts** *JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS*  
Ade, P., Aguirre, J., Ahmed, Z., Aiola, S., Ali, A., Alonso, D., Alvarez, M. A., Arnold, K., Ashton, P., Austermann, J., Awan, H., Baccigalupi, C., Baildon, et al  
2019
- **Simons Observatory large aperture telescope receiver design overview**  
Zhu, N., Orłowski-Scherer, J. L., Xu, Z., Ali, A., Arnold, K. S., Ashton, P. C., Coppi, G., Devlin, M. J., Dicker, S., Galitzki, N., Gallardo, P. A., Henderson, S. W., Ho, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Cooldown Strategies and Transient Thermal Simulations for the Simons Observatory**  
Coppi, G., Xu, Z., Ali, A., Galitzki, N., Gallardo, P. A., May, A. J., Orłowski-Scherer, J. L., Zhu, N., Devlin, M. J., Dicker, S., Keating, B., Limon, M., Longu, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Development of Calibration Strategies for the Simons Observatory**  
Bryan, S. A., Simon, S. M., Gerbino, M., Teply, G., Ali, A., Chinone, Y., Crowley, K., Fabbian, G., Gallardo, P. A., Goeckner-Wald, N., Keating, B., Koopman, B., Kusaka, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Studies of Systematic Uncertainties for Simons Observatory: Detector Array Effects**  
Crowley, K. T., Simon, S. M., Silva-Feaver, M., Goeckner-Wald, N., Ali, A., Austermann, J., Brown, M. L., Chinone, Y., Cukierman, A., Dober, B., Duff, S. M., Dunkley, J., Errard, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018

- **Designs for next generation CMB survey strategies from Chile**  
Stevens, J. R., Goeckner-Wald, N., Keskitalo, R., McCallum, N., Ali, A., Borrill, J., Brown, M. L., Chinone, Y., Gallardo, P. A., Kusaka, A., Lee, A. T., McMahon, J., Niemack, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Studies of Systematic Uncertainties for Simons Observatory: Optical Effects and Sensitivity Considerations**  
Gallardo, P. A., Gudmundsson, J., Koopman, B. J., Matsuda, F. T., Simon, S. M., Ali, A., Bryan, S., Chinone, Y., Coppi, G., Cothard, N., Devlin, M. J., Dicker, S., Fabbian, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **BoloCalc: a sensitivity calculator for the design of Simons Observatory**  
Hill, C. A., Bruno, S. M., Simon, S. M., Ali, A., Arnold, K. S., Ashton, P. C., Barron, D., Bryan, S., Chinone, Y., Coppi, G., Crowley, K. T., Cukierman, A., Dicker, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Studies of Systematic Uncertainties for Simons Observatory: Polarization Modulator Related Effects**  
Salatino, M., Lashner, J., Gerbino, M., Simon, S. M., Didier, J., Ali, A., Ashton, P. C., Bryan, S., Chinone, Y., Coughlin, K., Crowley, K. T., Fabbian, G., Galitzki, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Simons Observatory large aperture receiver simulation overview**  
Orlowski-Scherer, J. L., Zhu, N., Xu, Z., Ali, A., Arnold, K. S., Ashton, P. C., Coppi, G., Devlin, M., Dicker, S., Galitzki, N., Gallardo, P. A., Keating, B., Lee, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Modeling Transmission and Reflection Mueller Matrices of Dielectric Half-Wave Plates** *JOURNAL OF INFRARED MILLIMETER AND TERAHERTZ WAVES*  
Salatino, M., de Bernardis, P., Masi, S.  
2017; 38 (2): 215–28
- **Optical modeling and polarization calibration for CMB measurements with ACTPol and Advanced ACTPol**  
Koopman, B., Austermann, J., Cho, H., Coughlin, K. P., Duff, S. M., Gallardo, P. A., Hasselfield, M., Henderson, S. W., Ho, S., Hubmayr, J., Irwin, K. D., Li, D., McMahon, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2016
- **Readout of two-kilopixel transition-edge sensor arrays for Advanced ACTPol**  
Henderson, S. W., Stevens, J. R., Amiri, M., Austermann, J., Beall, J. A., Chaudhuri, S., Cho, H., Choi, S. K., Cothard, N. F., Crowley, K. T., Duff, S. M., Fitzgerald, C. P., Gallardo, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2016
- **Sensitivity to Cosmic Rays of Cold Electron Bolometers for Space Applications** *JOURNAL OF LOW TEMPERATURE PHYSICS*  
Salatino, M., de Bernardis, P., Kuzmin, L. S., Mahashabde, S., Masi, S.  
2014; 176 (3-4): 323–30
- **Cold-electron bolometers for future mm and sub-mm sky surveys**  
Salatino, M., de Bernardis, P., Mahashabde, S., Kuzmin, L. S., Masi, S., Holland, W. S., Zmuidzinas, J.  
SPIE-INT SOC OPTICAL ENGINEERING.2014
- **THE SPECTRAL ENERGY DISTRIBUTION OF THE CARINA NEBULA FROM FAR-INFRARED TO RADIO WAVELENGTHS** *ASTROPHYSICAL JOURNAL*  
Salatino, M., de Bernardis, P., Masi, S., Polenta, G.  
2012; 748 (1)
- **A cryogenic waveplate rotator for polarimetry at mm and submm wavelengths** *ASTRONOMY & ASTROPHYSICS*  
Salatino, M., de Bernardis, P., Masi, S.  
2011; 528