Lorenzo Moncelsi, Ph.D.

Full List of Publications (citations 1500, h-index 22; where not highlighted, appear as co-author in alphabetical order)

A note on collaborative programs is at the end of this document.

Primary Journals

1. Submillimeter Polarization Spectrum of the Carina Nebula, Shariff et al. 2019, accepted to ApJ.
2. BICEP2 / Keck Array X: Constraints on Primordial Gravitational Waves using Planck, WMAP, and New BICEP2/Keck Observations through the 2015 Season, Ade et al. 2018, Phys. Rev. Lett. 121, 221301
3. Measuring Cross-Spectra of the Cosmic Infrared Background from 95 to 1200 GHz, Viero et al. 2018, submitted to ApJ.
4. Relative Alignment Between the Magnetic Field and Molecular Gas Structure in the Vela C Giant Molecular Cloud using Low and High Density Tracers, Fissel et al. 2018, submitted to ApJ.
5. A Foreground Masking Strategy for [CII] Intensity Mapping Experiments Using Galaxies Selected by Stellar Mass and Redshift, Sun, **Moncelsi**, et al. 2018, ApJ, 856, 107.
6. First Observation of the Submm Polarization Spectrum in a Translucent Molecular Cloud, Ashton et al. 2018, ApJ, 857, 10
7. BICEP2 / Keck Array IX: New bounds on anisotropies of CMB polarization rotation and implications for axion-like particles and primordial magnetic fields, Ade et al. 2017, Phys. Rev. D 96, 102003
8. A New Limit on CMB Circular Polarization from SPIDER, Nagy et al. 2017, ApJ, 844, 151.
9. The relation between column density structures and the magnetic field orientation in Vela C, Soler et al. 2017, A&A, 603, 64.
10. Combination of BLASTPol polarized emission and NIR interstellar polarization for Vela C, Santos et al. 2017, ApJ, 837, 161.
11. The EBEX Balloon-Borne Experiment - Gondola, Attitude Control, Control Software, Aboobaker et al. 2017, ApJS, 239, 9
12. Balloon-borne submillimeter polarimetry of the Vela C molecular cloud, Fissel et al. 2016, ApJ, 824, 134.
13. Submillimeter polarization spectrum in the Vela C molecular cloud, Gandilo et al. 2016, ApJ, 824, 84
14. A cryogenic rotation stage with a large clear aperture for a half-wave plate, Bryan et al. 2016, Rev. Sci. Instrum. 87, 014501.
15. The Thermal Design, Characterization, and Performance of the SPIDER Long-Duration Balloon Cryostat, Gudmundsson et al. 2015, Cryogenics, 72, 65, ArXiv 1506.06953.
16. Antenna-coupled TES bolometers used in BICEP2, Keck array and SPIDER, Ade et al. 2015, ApJ, 812, 176.
17. HerMES: Current CIB Estimates are Consistent with Correlated Emission from Known Galaxies at $z \leq 4$, Viero, **Moncelsi**, et al. 2015, ApJL, 809, L22.
18. Comparison of prestellar core elongations & large-scale molecular cloud structures in Lupus I, Poidevin et al. 2014, ApJ, 791, 43.
19. Empirical modeling of the BLASTPol achromatic half-wave plate, **Moncelsi** et al. 2014, MNRAS, 437, 2772.
20. The Herschel Stripe 82 Survey (HerS): Maps & Early Catalog, Viero, Asboth, Roseboom, **Moncelsi**, et al. 2014, ApJS, 210, 22.
21. Lupus I Observations from the 2010 Flight of BLASTPol, Matthews et al. 2014, ApJ, 784, 116.
22. HerMES: The Contribution to the CIB from Galaxies Selected by Mass and Redshift, Viero, **Moncelsi**, et al. 2013, ApJ, 779, 32.
23. Correlations in the (Sub)millimeter Background from ACT $\times$ BLAST, Hajian et al., 2012, ApJ, 744, 40.
24. Measuring star formation in high-z massive galaxies: A mid-infrared to submillimeter study of the GOODS NICMOS Survey sample, Viero, **Moncelsi**, et al. 2012, MNRAS, 421, 2161.
25. A panchromatic study of BLAST counterparts: total SFR, morphology, AGN & stellar mass, **Moncelsi** et al. 2011 ApJ, 727, 83.
26. New Polypropylene Embedded Metal-Mesh Broadband Achromatic Half Wave Plate for Millimeter Wavelengths, Zhang, Ade, Mauskopf, Savini, **Moncelsi**, and Whitehouse, 2011, Applied Optics, Volume 50, p. 3750.
27. Submm observations of galaxy clusters with BLAST: star-formation activity in Abell 3112, Braglia et al 2011, MNRAS, 412, 1187
28. A joint analysis of BLAST 250–500 μm and LABOCA 870 μm observations in the ECDFS, Chapin et al. 2011, MNRAS, 411, 505.
29. Evolution of the star formation histories of BLAST galaxies, Dye, Eales, **Moncelsi** and Pascale, 2010, MNRAS Letters, 407, L69.
30. BLAST: the far-infrared/radio correlation in distant galaxies, Ivison et al. 2010, MNRAS, 402, 245.
31. New artificial dielectric metamaterial and its application as a terahertz antireflection coating, Zhang, Ade, Mauskopf, **Moncelsi**, Savini and Whitehouse, 2009, Applied Optics, Volume 48, p. 6635.
32. BLAST: The Redshift Survey, Eales et al. 2009, ApJ, 707, 1779.
33. BLAST: Correlations in the CIB at 250, 350, 500 μm reveal clustering of star-forming galaxies, Viero et al. 2009, ApJ, 707, 1766.
34. Submillimeter Number Counts from Statistical Analysis of BLAST Maps, Patanchon et al. 2009, ApJ, 707, 1750.

35. BLAST: A Far-IR Measurement of the History of Star Formation, Pascale et al. 2009, ApJ, 707, 1740.
36. BLAST: Resolving the Cosmic Submillimeter Background, Marsden et al. 2009, ApJ, 707, 1729.
37. BLAST 2006: Calibration and Flight Performance, Truch et al. 2009, ApJ, 707, 1723.
38. Radio and Mid-Infrared Identification of Blast Source Counterparts in the CDFS, Dye et al. 2009, ApJ, 703, 285.
39. Over half of the far-infrared background light comes from galaxies at $z \geq 1.2$, Devlin et al. 2009, Nature, 458, 7239, pp. 737-739.

Refereed Conference Proceedings

40. Sub-Kelvin Cooling for the BICEP Array Project, Duband, Prouve, Bock, **Moncelsi** and Schillaci, 2018, Proceedings of the 20th International Cryocooler Conference
41. Measurements of Degree-Scale B-mode Polarization with the BICEP/Keck Experiments at South Pole, Ade et al. 2018 (**Moncelsi** corresponding author), Proceedings of CIPANP 2018
42. 2017 upgrade and performance of BICEP3, Kang et al. 2018, Proc. SPIE Vol. 10708
43. Ultra-thin large-aperture vacuum windows for millimeter wavelengths receivers, Barkats et al. 2018, Proc. SPIE Vol. 10708
44. Design and performance of wide-band corrugated walls for the BICEP Array detector modules at 30/40 GHz, Soliman et al. 2018, Proc. SPIE V. 10708
45. BICEP Array cryostat and mount design, Crumrine et al. 2018, Proc. SPIE Vol. 10708
46. BICEP Array: a multi-frequency degree-scale CMB polarimeter, Hui et al. 2018, Proc. SPIE Vol. 10708
47. Hafnium films and magnetic shielding for TIME, a mm-wavelength spectrometer array, Hunacek et al. 2018, JLTP, Proc. LTD17
48. SPIDER: CMB polarimetry from the edge of space, Gualtieri et al. 2017, JLTP, Proc. LTD17
49. 280 GHz focal plane design & characterization for the SPIDER-2 suborbital polarimeter, Bergman et al. 2017, JLTP, Proc. LTD17
50. Design of 280 GHz feedhorn-coupled TES arrays for the balloon-borne polarimeter SPIDER, Hubmayr et al. 2016, Proc. SPIE
51. SPIDER: Probing the dawn of time from above the clouds, **Moncelsi** et al. 2016, IJMPD, Proc. 14th Marcel Grossmann
52. Pre-flight integration and characterization of the Spider balloon-borne telescope, Rahlin et al. 2014, Proc. SPIE V. 9153, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII, 915313
53. Design and construction of a carbon fiber gondola for the Spider balloon-borne telescope, Soler et al. 2014, Proc. SPIE V. 9145, 91450T
54. Attitude Determination for Balloon-borne Experiments, Gandilo et al. 2014, Proc. SPIE V. 9145, 91452U
55. BLASTbus electronics: general-purpose readout and control for balloon-borne experiments, Benton et al. 2014, Proc. SPIE V. 9145, 91450V
56. Pointing control for the Spider balloon-borne telescope, Shariff et al. 2014, Proc. SPIE V. 9145, 91450U
57. BLASTPol: Performance and results from the 2012 Antarctic flight, Galitzki et al. 2014, Proc. SPIE V. 9145, 91450R
58. Thermal Design and Performance of the Balloon-borne Large Aperture Telescope for Polarimetry (BLASTPol), Soler et al. 2014, Proc. SPIE V. 9145, 914534
59. Antenna-coupled TES bolometers for the Keck Array, Spider, and Polar-1, O'Brient et al. 2012, Proc. SPIE, 8452, 84521G.
60. The balloon-borne large-aperture submillimeter telescope for polarimetry (BLASTPol): performance and results from the 2010 Antarctic flight, Pascale et al. 2012, Proceedings of the SPIE, 8444, 844415.
61. The Balloon-borne Large-Aperture Submillimeter Telescope for polarimetry: BLASTPol, Fissel et al. 2010, Proc. SPIE, V. 7741, pp. 77410E-77410E-14.
62. Characterising the SCUBA-2 superconducting bolometer arrays, Bintley et al. 2010, Proc. SPIE, V. 7741, pp. 774106-774106-14.
63. The Balloon-borne Large-Aperture Submillimeter Telescope for polarization: BLAST-Pol, Marsden et al. 2008, Proc. SPIE, Volume 7020, pp. 702002-702002-12.

Note on collaborative programs

Where not highlighted in boldface, my name appears as co-author in alphabetical order, as per standard policy in the BICEP/Keck, BLAST(Pol), SPIDER, EBEX and SCUBA-2 collaborations. In each of these, I was allowed to sign the paper as a member of the collaboration or of the specific study, a status that was granted to me only after a set quota of individual work for each project.

The details my contributions to the BLAST and BLASTPol projects are described in Section 1.3.1 of my PhD thesis.

In other papers without strict alphabetical order, the position of my name in the author list reflects the extent of my contribution relative to the lead author. In particular, I was a crucial contributor to Viero et al. 2012, 2013, 2015, as well as Sun et al. 2018. For instance, I developed the novel analytic approach to the stacking analysis in the presence of galaxy clustering; I contributed to the development and testing of the simultaneous-stacking code SIMSTACK; I led the work on SED fitting and FIR luminosity estimates.