

# Alexander van Engelen

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CONTACT INFORMATION	School of Earth and Space Exploration Arizona State University PO Box 871404, Tempe AZ, 85287-1404	alexander.van.engelen@asu.edu
EDUCATION AND POSITIONS	<b>Assistant Professor</b> School of Earth and Space Exploration, Arizona State University	2019 –
	<b>Senior Research Associate</b> Canadian Institute for Theoretical Astrophysics, University of Toronto	2017 – 2019
	<b>Postdoctoral Fellow</b> Canadian Institute for Theoretical Astrophysics, University of Toronto	2014 – 2017
	<b>Postdoctoral Researcher</b> Department of Physics and Astronomy, Stony Brook University	2013 – 2014
	<b>Ph.D.</b> Department of Physics, McGill University • Thesis title: <i>Measuring Gravitational Lensing of the CMB by Large-Scale Structure.</i> • Advisor; Gil Holder	awarded 2013
	<b>M.Sc.</b> Department of Physics, McGill University • Thesis title: <i>Reionization and the Primordial Fluctuations in the Universe.</i> • Advisor: Gil Holder	awarded 2008
	<b>B.Sc.</b> Simon Fraser University • Honors Mathematical Physics program (Dual Major) • Thesis Title: <i>New Mapmaking Ideas for Submillimetre Experiments.</i> • Advisor: Douglas Scott (UBC)	awarded 2004
AWARDS	Short Term Visitor Program, Kavli Institute for Cosmology, Cambridge UK	2019
	Beatrice and Vincent Tremaine Fellowship For “outstanding research work at CITA.”	2017
	CITA Postdoctoral Fellowship	2014
	Nominee: Plaskett Medal for most outstanding astrophysics PhD thesis in Canada	2013
	McGill Principal’s Graduate Fellowship	2010
	Molson and Hilton Hart Fellowship, McGill	2010
	FQRNT Quebec Funds for Nature and Technology Research Scholarship Full graduate research funding; proposal ranked 1st in astrophysics category.	2008-2010

COLLABORATIONS	South Pole Telescope - first-generation survey (SPT-SZ)	2009 – 2012
	Atacama Cosmology Telescope - Polarization (ACTPol) Co-lead, gravitational lensing group	2013 –
	Advanced ACTPol	2014 –
	Simons Observatory Analysis Working Group Pipeline co-lead, Lensing Reconstruction	2016 –
	CMB-Stage 4 Significant contributor to <a href="#">CMB-S4 science book</a>	2015 –
	CCAT-prime	2016 –
	PICO, NASA CMB space probe proposal Executive Committee member Extragalactic Working Group member	2017 –
MENTORSHIP	Students advised or co-advised while at Arizona State University:	
	<ul style="list-style-type: none"> <li>• PhD student Yogesh Mehta <span style="float: right;">2019 –</span> <i>Modelling the cosmic infrared background.</i></li> </ul>	
	Students advised or co-advised while at University of Toronto:	
	<ul style="list-style-type: none"> <li>• Undergraduate Eegene (Clara) Chung <span style="float: right;">2019</span> <i>The impact of baryonic feedback on CMB lensing measurements; see <a href="#">Chung et al. 2019</a>.</i></li> <li>• PhD student Martine Lokken <span style="float: right;">2018 –</span> <i>The connection between the Sunyaev-Zel'dovich effect and filaments in large-scale structure.</i></li> <li>• Undergraduate Jason Lee <span style="float: right;">2018 –</span> <i>Gravitational Lensing of the Cosmic Infrared Background.</i></li> <li>• Undergraduate Oliver Philcox (Cambridge) <span style="float: right;">2018</span> <i>Statistical signatures of dust in CMB maps; see <a href="#">Philcox et al. 2018</a>.</i></li> <li>• Masters student Rémi Mourgues (École Polytechnique) <span style="float: right;">2018</span> <i>Gravitational Lensing of the Cosmic Infrared Background.</i></li> <li>• PhD student Victor Chan <span style="float: right;">2017 –</span> <i>Novel estimators for CMB secondaries.</i></li> <li>• PhD student Daniel Baker <span style="float: right;">2016 –</span> <i>Applying Cosmological Statistical Tools to Pulsar Scintillometry Analysis.</i></li> <li>• Undergraduate Louis Pham <span style="float: right;">2016 – 2017</span> <i>Gravitational Lensing of the Cosmic Infrared Background.</i></li> <li>• Undergraduate Connor Sheere (McGill; lead advisor) (2x) <span style="float: right;">2016, 2017</span> <i>Establishing the Origin of B-mode Polarization; The Polarized SZ Effect; see <a href="#">Sheere et al. 2017</a>.</i></li> <li>• Undergraduate Harrison Winch (McMaster) <span style="float: right;">2016</span> <i>Primordial non-Gaussianity with CMB Polarization.</i></li> <li>• Undergraduate Anita Bahmanyar (sole advisor) <span style="float: right;">2015</span> <i>Probing primordial non-Gaussianity with the Cosmic Infrared and Microwave Backgrounds.</i></li> </ul>	

TEACHING EXPERIENCE	Professional development undertaken	
	• Master Class for Teaching Online (Arizona State University)	2019
	• Institute for Scientists and Engineers Professional Development Program	2016
	Designed and implemented a day-long, inquiry-based learning activity for 12 undergraduate researchers. 150-hour development program.	
	Arizona State University	
	• Course development: Galaxies and Cosmology (for online degree)	
	University of Toronto	
	• Lead course administrator and instructor	2016
	<i>Introduction to Computing for Astrophysics Research.</i> An intensive 3-credit course for undergraduate researchers.	
	• Pedagogical blackboard talks (10x)	2014 –
• Blackboard talks within the cosmology group (7x)	2014 –	
PROFESSIONAL SERVICE	Referee for Astronomy and Astrophysics, The Astrophysical Journal, The Astrophysical Journal Letters, The Astronomical Journal, Journal of Cosmology and Astro-particle Physics, Physical Review Letters, Physical Review D	
	External reviewer for initial (6-month) PhD students' projects at the University of Toronto's Department of Astronomy and Astrophysics (2x)	2018
	CITA Fellowship Committee member	2017, 2018
	Reviewer of applications for postdoctoral fellowships	
	Co-organizer and SOC member, <a href="#">Kavli CMB Lensing Workshop</a> , Stanford	2017
	CITA summer undergraduate research program committee member	2016
	Organizing committee, Student Workshop, Centre de Recherche d'Astrophysique du Québec	2009
	Organizer or co-organizer for local meetings and journal clubs	
	• CITA cosmology blackboard talks and paper discussion	2018 – 2019
	• CITA pedagogical blackboard talks	2017 – 2019
• CITA-Perimeter Institute joint workshops	2018 – 2019	
• Stony Brook Astrophysics Journal Club	2013 – 2014	
• McGill Extragalactic Lunch	2011	
• McGill Galaxy Cluster Seminar Series	2008	
OUTREACH	• Instructor at Princeton University's CMB Analysis Winter School, introducing analysis methods and software to graduate students and postdocs	2019
	• Instructor at York University's <a href="#">Astro Workshop 2018</a> , professional development for high school teachers teaching astronomy	2018
	• Cosmology talk with Toronto public high school students	2017
	• Public talk at <i>Astronomy On Tap Toronto</i> , "The Cosmic Web"	2015
	• Public telescope observing, University of Toronto	2015 –
	• Public talk at Stony Brook, "The History and Evolution of the Universe"	2014

INVITED SEMINARS AND COLLOQUIA	[1] McGill University Physics, Montreal, QC	Jan. 2020
	[2] Arizona State University, Tempe, AZ	Mar. 2019
	[3] Cambridge Kavli Institute for Cosmology, Cambridge, UK	Mar. 2019
	[4] Oxford Physics, Oxford, UK	Feb. 2019
	[5] University of Missouri, Kansas City, MO	Feb. 2019
	[6] Argonne National Laboratory, Argonne IL	Apr. 2017
	[7] Perimeter Institute for Theoretical Physics, Waterloo ON	Apr. 2017
	[8] University of Waterloo Astrophysics, Waterloo ON	Apr. 2016
	[9] University of Chicago Kavli Institute for Cosmological Physics, Chicago IL	Nov. 2015
	[10] Institute for Advanced Study, Princeton NJ	Feb. 2014
	[11] Stony Brook University, Stony Brook NY	June 2012
	[12] Caltech Astrophysics, Pasadena CA	May 2011

INVITED SHORTER TALKS	[13] <i>Accurate Lensing in the Era of Precision Cosmology</i> workshop, Berkeley CA	Jan. 2019
	[14] <i>The CMB in HD</i> workshop, Center for Computational Astrophysics, Flatiron Institute, New York NY	Dec. 2018
	[15] <i>Lunchtime talk</i> , MIT Kavli Institute, Cambridge MA	Oct. 2018
	[16] <i>CMB-S4 Science</i> workshop, Argonne IL	Feb. 2018
	[17] <i>B-modes from Space</i> workshop, Berkeley CA	Dec. 2017
	[18] <i>CMB Foregrounds</i> workshop, UCSD, San Diego CA (also working group lead)	Dec. 2017
	[19] <i>CMB-S4 Science</i> workshop, Harvard, Cambridge MA	Aug. 2017
	[20] <i>TeV Particle Astrophysics</i> conference, Ohio State University, Columbus OH	Aug. 2017
	[21] <i>Advances in Theoretical Cosmology in Light of Data</i> conference, Nordita, Stockholm, Sweden	Jul. 2017
	[22] <i>Cosmo-lunch</i> , Princeton Astrophysics, Princeton NJ	Mar. 2017
	[23] <i>CMB-S4 Science</i> workshop, Chicago IL	Sept. 2016
	[24] <i>Neutrinos and Light Particles in Cosmology</i> workshop, Berkeley CA	June 2016
	[25] <i>Cross-correlation Spectacular with LSST</i> workshop, Stony Brook NY	May 2016
	[26] <i>CMB-S4 Science</i> workshop, Berkeley CA	Mar. 2016
	[27] <i>CMB-S4 Science</i> workshop, Ann Arbor MI	Sept. 2015
	[28] <i>CITA / Perimeter Institute Day</i> , CITA, Toronto ON	Dec. 2014
	[29] <i>Cosmology Beyond the Power Spectrum</i> workshop, Berkeley CA (invited review)	May 2013
	[30] <i>Berkeley CMB Lensing Workshop</i> , Berkeley CA	Apr. 2011

CONTRIBUTED  
TALKS

- [31] *SnowCluster* conference, Snowbird UT Mar. 2018
- [32] *COSMO-16* conference, Ann Arbor MI Aug. 2016
- [33] *American Astronomical Society Meeting*, Kissimmee FL Jan. 2016
- [34] *The Olympian Symposium* conference, Paralia Katerini, Greece May 2015
- [35] *LSST Theory and Joint Probes* workshop, Pittsburgh PA Apr. 2015
- [36] *Cosmology On Safari* conference, Bonamanzi, South Africa Jan. 2015
- [37] *BNL Forum* conference, Brookhaven National Laboratory, Upton NY May 2013
- [38] *SnowPAC* conference, Snowbird UT Mar. 2012
- [39] *Great Lakes Cosmology Workshop*, Chicago IL June 2010
- [40] *Centre de Recherche d'Astrophysique du Quebec* annual meeting Mar. 2008
- [41] *Centre de Recherche d'Astrophysique du Quebec* annual meeting Mar. 2007

REFERENCES

- Professor Neelima Sehgal  
Department of Physics and Astronomy  
Stony Brook University  
Stony Brook, NY, 11794-3800  
neelima.sehgal@stonybrook.edu  
*Prof. Sehgal was my advisor for my position at Stony Brook University.*
- Professor Gil Holder  
Department of Physics  
University of Illinois at Urbana-Champaign  
1110 West Green Street  
Urbana, IL, 61801-3003  
gholder@illinois.edu  
*Prof. Holder was my PhD and MSc advisor (at McGill).*
- Professor J. Richard Bond  
Canadian Institute for Theoretical Astrophysics  
University of Toronto  
60 Saint George St.  
Toronto, ON, Canada M5S 3H8  
bond@cita.utoronto.ca  
*Prof. Bond is a senior member of CITA.*
- Professor Daniel Green  
Department of Physics  
University of California  
366 LeConte Hall, MC 7300  
Berkeley, CA 94720-7300  
drgreen@cita.utoronto.ca  
*I worked with Prof. Green on a theory project on CMB delensing.*
- Professor Joel Meyers  
Department of Physics  
Southern Methodist University  
3215 Daniel Ave.  
Dallas, TX 75275-0175  
jmeyers@cita.utoronto.ca  
*I worked with Prof. Meyers on many theoretical projects.*

- : alphabetical author list (no lead author)
- \*: supervision of undergraduate research

**A. Papers as part of core science team (first, second, or third author)**

*This set of 18 papers has 659 citations (553 refereed) as of November 2019.*

- [1] \* Chung E., Foreman S., and **van Engelen A.** 2020.  
*Baryonic effects on CMB lensing and neutrino mass constraints.*  
Physical Review D, 101, 063534.
- [2] Coulton W. R., Ota A., and **van Engelen A.** 2019.  
*Cosmology with the thermal-kinetic Sunyaev-Zel'dovich effect.*  
Under review at Physical Review Letters; preprint arXiv:1910.10152.
- [3] \* Philcox O. H. E., Sherwin B. D., and **van Engelen A.** 2018.  
*Detection and removal of B-mode dust foregrounds with signatures of statistical anisotropy.*  
Monthly Notices of the Royal Astronomical Society, 479, 5577.
- [4] Foreman S., Meerburg P. D., **van Engelen A.**, and Meyers J. 2018.  
*Lensing reconstruction from line intensity maps: the impact of gravitational nonlinearity.*  
Journal of Cosmology and Astro-particle Physics, 7, 046.
- [5] Meyers J., Meerburg P. D., **van Engelen A.**, and Battaglia N. 2018.  
*Beyond CMB cosmic variance limits on reionization with the polarized Sunyaev-Zel'dovich effect.*  
Physical Review D, 97, 103505. *Selected as an "Editors' Suggestion."*
- [6] • Meerburg P. D., Meyers J., and **van Engelen A.** 2017.  
*Reconstructing the Primary CMB Dipole.*  
Physical Review D, 96, 083519.
- [7] • Meerburg P. D., Meyers J., Smith K. M., and **van Engelen A.** 2017.  
*Reconstructing CMB fluctuations and the mean reionization optical depth.*  
Physical Review D, 95, 123538.
- [8] • Green D., Meyers J., and **van Engelen A.** 2017.  
*CMB delensing beyond the B modes.*  
Journal of Cosmology and Astro-particle Physics, 12, 005.
- [9] Sherwin B. D., **van Engelen A.**, Sehgal N., Madhavacheril M., et al. 2017.  
*The Atacama Cosmology Telescope: Two-Season ACTPol Lensing Power Spectrum.*  
Physical Review D, 95, 123529.
- [10] \* Sheere C., **van Engelen A.**, Meerburg P. D., and Meyers J. 2016.  
*Establishing the origin of CMB B-mode Polarization.*  
Physical Review D, 96, 063508.
- [11] Meerburg P. D., Meyers J., **van Engelen A.**, and Ali-Haïmoud Y. 2016.  
*CMB B-mode non-Gaussianity.*  
Physical Review D, 93, 123511.
- [12] **van Engelen A.**, Sherwin B. D., Sehgal N., et al. 2015.  
*The Atacama Cosmology Telescope: Lensing of CMB Temperature and Polarization Derived from Cosmic Infrared Background Cross-correlation.*  
The Astrophysical Journal, 808, 7.
- [13] **van Engelen A.**, Bhattacharya S., Sehgal N., Holder G., Zahn O., and Nagai D. 2014.  
*CMB Lensing Power Spectrum Biases from Galaxies and Clusters Using High-angular Resolution Temperature Maps.*  
The Astrophysical Journal, 786, 13.

- [14] Noble A. G., Geach J. E., **van Engelen A. J.**, et al. 2013.  
*A submillimetre-bright  $z \sim 3$  overdensity behind a  $z \sim 1$  supercluster revealed by SCUBA-2 and Herschel.*  
Monthly Notices of the Royal Astronomical Society, 436, L40.
- [15] **van Engelen A.**, Keisler R., Zahn O., et al. 2012.  
*A Measurement of Gravitational Lensing of the Microwave Background Using South Pole Telescope Data.*  
The Astrophysical Journal, 756, 142.
- [16] Bleem L. E., **van Engelen A.**, Holder G. P., et al. 2012.  
*A Measurement of the Correlation of Galaxy Surveys with CMB Lensing Convergence Maps from the South Pole Telescope.*  
The Astrophysical Journal, 753, L9.
- [17] Anderes E., Knox L., and **van Engelen A.** 2011.  
*Mapping gravitational lensing of the CMB using local likelihoods.*  
Physical Review D, 83, 043523.
- [18] Holder G. P., Nollett K. M., and **van Engelen A.** 2010.  
*On Possible Variation in the Cosmological Baryon Fraction.*  
The Astrophysical Journal, 716, 907.

#### **B. Collaborative papers with significant contribution**

*This set of 12 papers has 675 citations (545 refereed) as of January 2020.*

- [19] Stein G., Alvarez M. A., Bond J. R., **van Engelen A.**, Battaglia N. 2020.  
*The Websky Extragalactic CMB Simulations.*  
Under review at JCAP, arXiv:2001.08787.
- [20] Coulton W. R., Meerburg P. D., Baker D. G., Hotinli S. C., Duivenvoorden A. J., and **van Engelen A.** 2019.  
*Minimizing gravitational lensing contributions to the primordial bispectrum covariance.*  
Under review at Physical Review D, arXiv:1912.07619.
- [21] Hotinli S. C., Meyers J., Dalal N., Jaffe A. H., Johnson M. C., Mertens J. B., Münchmeyer M., Smith K. M., and **van Engelen A.** 2019.  
*Transverse Velocities with the Moving Lens Effect.*  
Physical Review Letters, 123, 061301.
- [22] Foreman S., Meerburg P. D., Meyers J., and **van Engelen A.** 2019.  
*Cosmic variance mitigation in measurements of the integrated Sachs-Wolfe effect.*  
Physical Review D, 99, 083506.
- [23] The Simons Observatory Collaboration: Ade P., Aguirre J., et al. (incl. **van Engelen A.**) 2018.  
*The Simons Observatory: science goals and forecasts.*  
Journal of Cosmology and Astro-Particle Physics, 2019, 056.
- [24] Sehgal N., Madhavacheril M. S., Sherwin B., and **van Engelen A.** 2017.  
*Internal delensing of cosmic microwave background acoustic peaks.*  
Physical Review D, 95, 103512.
- [25] Miyatake H., Madhavacheril M. S., Sehgal N., Slosar A., Spergel D. N., Sherwin B., and **van Engelen A.** 2017.  
*Measurement of a Cosmographic Distance Ratio with Galaxy and Cosmic Microwave Background Lensing.*  
Physical Review Letters, 118, 161301.

- [26] Allison R., Lindsay S. N., Sherwin B. D., et al. (incl. **van Engelen A.**) 2015.  
*The Atacama Cosmology Telescope: measuring radio galaxy bias through cross-correlation with lensing.*  
Monthly Notices of the Royal Astronomical Society, 451, 849.
- [27] Madhavacheril M., Sehgal N., Allison R., et al. (incl. **van Engelen A.**) 2015.  
*Evidence of Lensing of the Cosmic Microwave Background by Dark Matter Halos.*  
Physical Review Letters, 114, 151302.
- [28] Geach J. E., Hickox R. C., Bleem L. E., et al. (incl. **van Engelen A.**) 2013.  
*A Direct Measurement of the Linear Bias of Mid-infrared-selected Quasars at  $z \sim 1$  using Cosmic Microwave Background Lensing.*  
The Astrophysical Journal, 776, L41.
- [29] Holder G. P., Viero M. P., Zahn O., et al. (incl. **van Engelen A.**) 2013.  
*A Cosmic Microwave Background Lensing Mass Map and Its Correlation with the Cosmic Infrared Background.*  
The Astrophysical Journal, 771, L16.
- [30] Vanderlinde K., Crawford T. M., de Haan T., et al. (incl. **van Engelen A.**) 2010.  
*Galaxy Clusters Selected with the Sunyaev-Zel'dovich Effect from 2008 South Pole Telescope Observations.*  
The Astrophysical Journal, 722, 1180.

### C. Collaborative papers with some contribution

*This set of 24 papers has 2916 citations (2498 refereed) as of November 2019.*

- [31] Namikawa T., Guan Y., Darwish O., et al. (incl. **van Engelen A.**) 2020.  
*The Atacama Cosmology Telescope: Constraints on Cosmic Birefringence.*  
arXiv e-prints, arXiv:2001.10465.
- [32] Madhavacheril M. S., Hill J. C., Naess S., et al. (incl. **van Engelen A.**) 2019.  
*The Atacama Cosmology Telescope: Component-separated maps of CMB temperature and the thermal Sunyaev-Zel'dovich effect.*  
arXiv e-prints, arXiv:1911.05717.
- [33] Shin T., Adhikari S., Baxter E., et al. (incl. **van Engelen A.**) 2018.  
*Measurement of the splashback feature around SZ-selected Galaxy clusters with DES, SPT, and ACT.*  
Monthly Notices of the Royal Astronomical Society, 487, 2900.
- [34] Miyatake H., Battaglia N., Hilton M., et al. (incl. **van Engelen A.**) 2018.  
*Weak-lensing Mass Calibration of ACTPol Sunyaev-Zel'dovich Clusters with the Hyper Suprime-Cam Survey.*  
The Astrophysical Journal, 875, 63.
- [35] Coulton W. R., Aiola S., Battaglia N., et al. (incl. **van Engelen A.**) 2017.  
*Non-Gaussianity of secondary anisotropies from ACTPol and Planck.*  
Journal of Cosmology and Astro-particle Physics, 9, 022.
- [36] Hilton M., Hasselfield M., Sifón C., et al. 2018.  
*The Atacama Cosmology Telescope: The Two-season ACTPol Sunyaev-Zel'dovich Effect Selected Cluster Catalog.*  
The Astrophysical Journal Supplement Series, 235, 20.
- [37] Louis T., Grace E., Hasselfield M., et al. (incl. **van Engelen A.**) 2017.  
*The Atacama Cosmology Telescope: two-season ACTPol spectra and parameters.*  
Journal of Cosmology and Astro-particle Physics, 6, 031.



- [38] Henderson S. W., Allison R., Austermann J., et al. (incl. **van Engelen A.**) 2016.  
*Advanced ACTPol Cryogenic Detector Arrays and Readout.*  
Journal of Low Temperature Physics, 184, 772.
- [39] De Bernardis F., Aiola S., Vavagiakis E. M., et al. (incl. **van Engelen A.**) 2017.  
*Detection of the pairwise kinematic Sunyaev-Zel'dovich effect with BOSS DR11 and the Atacama Cosmology Telescope.*  
Journal of Cosmology and Astro-particle Physics, 3, 008.
- [40] De Bernardis F., Stevens J. R., Hasselfield M., et al. (incl. **van Engelen A.**) 2016.  
*Survey strategy optimization for the Atacama Cosmology Telescope.*  
Observatory Operations: Strategies, Processes, and Systems VI, 9910, 991014.
- [41] Schaan E., Ferraro S., Vargas-Magaña M., et al. (incl. **van Engelen A.**) 2016.  
*Evidence for the kinematic Sunyaev-Zel'dovich effect with the Atacama Cosmology Telescope and velocity reconstruction from the Baryon Oscillation Spectroscopic Survey.*  
Physical Review D, 93, 082002.
- [42] Huterer D., Kirkby D., Bean R., et al. (incl. **van Engelen A.**) 2015.  
*Growth of cosmic structure: Probing dark energy beyond expansion.*  
Astroparticle Physics, 63, 23.
- [43] Naess S., Hasselfield M., McMahon J., et al. (incl. **van Engelen A.**) 2014.  
*The Atacama Cosmology Telescope: CMB polarization at  $200 < l < 9000$ .*  
Journal of Cosmology and Astro-particle Physics, 10, 007.
- [44] Crawford T. M., Schaffer K. K., Bhattacharya S., et al. (incl. **van Engelen A.**) 2014.  
*A Measurement of the Secondary-CMB and Millimeter-wave-foreground Bispectrum using  $800 \text{ deg}^2$  of South Pole Telescope Data.*  
The Astrophysical Journal, 784, 143.
- [45] Hou Z., Reichardt C. L., Story K. T., et al. (incl. **van Engelen A.**) 2014.  
*Constraints on Cosmology from the Cosmic Microwave Background Power Spectrum of the  $2500 \text{ deg}^2$  SPT-SZ Survey.*  
The Astrophysical Journal, 782, 74.
- [46] Story K. T., Reichardt C. L., Hou Z., et al. (incl. **van Engelen A.**) 2013.  
*A Measurement of the Cosmic Microwave Background Damping Tail from the  $2500\text{-Square-Degree}$  SPT-SZ Survey.*  
The Astrophysical Journal, 779, 86.
- [47] McDonald M., Benson B. A., Vikhlinin A., et al. (incl. **van Engelen A.**) 2013.  
*The Growth of Cool Cores and Evolution of Cooling Properties in a Sample of 83 Galaxy Clusters at  $0.3 < z < 1.2$  Selected from the SPT-SZ Survey.*  
The Astrophysical Journal, 774, 23.
- [48] Benson B. A., de Haan T., Dudley J. P., et al. (incl. **van Engelen A.**) 2013.  
*Cosmological Constraints from Sunyaev-Zel'dovich-selected Clusters with X-Ray Observations in the First  $178 \text{ deg}^2$  of the South Pole Telescope Survey.*  
The Astrophysical Journal, 763, 147.
- [49] Reichardt C. L., Stalder B., Bleem L. E., et al. (incl. **van Engelen A.**) 2013.  
*Galaxy Clusters Discovered via the Sunyaev-Zel'dovich Effect in the First  $720 \text{ Square Degrees}$  of the South Pole Telescope Survey.*  
The Astrophysical Journal, 763, 127.
- [50] Stalder B., Ruel J., Šuhada R., et al. (incl. **van Engelen A.**) 2013.  
*SPT-CL J0205-5829: A  $z = 1.32$  Evolved Massive Galaxy Cluster in the South Pole Telescope Sunyaev-Zel'dovich Effect Survey.*  
The Astrophysical Journal, 763, 93.

- [51] Song J., Zenteno A., Stalder B., et al. (incl. **van Engelen A.**) 2012.  
*Redshifts, Sample Purity, and BCG Positions for the Galaxy Cluster Catalog from the First 720 Square Degrees of the South Pole Telescope Survey.*  
 The Astrophysical Journal, 761, 22.
- [52] High F. W., Hoekstra H., Leethochawalit N., et al. (incl. **van Engelen A.**) 2012.  
*Weak-lensing Mass Measurements of Five Galaxy Clusters in the South Pole Telescope Survey Using Magellan/Megacam.*  
 The Astrophysical Journal, 758, 68.
- [53] Zahn O., Reichardt C. L., Shaw L., et al. (incl. **van Engelen A.**) 2012.  
*Cosmic Microwave Background Constraints on the Duration and Timing of Reionization from the South Pole Telescope.*  
 The Astrophysical Journal, 756, 65.
- [54] McDonald M., Bayliss M., Benson B. A., et al. (incl. **van Engelen A.**) 2012.  
*A massive, cooling-flow-induced starburst in the core of a luminous cluster of galaxies.*  
 Nature, 488, 349.
- [55] Reichardt C. L., Shaw L., Zahn O., et al. (incl. **van Engelen A.**) 2012.  
*A Measurement of Secondary Cosmic Microwave Background Anisotropies with Two Years of South Pole Telescope Observations.*  
 The Astrophysical Journal, 755, 70.
- [56] Keisler R., Reichardt C. L., Aird K. A., et al. (incl. **van Engelen A.**) 2011.  
*A Measurement of the Damping Tail of the Cosmic Microwave Background Power Spectrum with the South Pole Telescope.*  
 The Astrophysical Journal, 743, 28.

#### **D. Unrefereed contributions**

*This set of 5 papers has 829 citations (539 refereed) as of November 2019.*

- [57] • Abazajian K., Addison G., Adshead P., et al. (incl. **van Engelen A.**) 2019.  
*CMB-S4 Science Case, Reference Design, and Project Plan.*  
 arXiv e-prints, arXiv:1907.04473.
- [58] Hanany S., Alvarez M., Artis E., et al. (incl. **van Engelen A.**) 2019.  
*PICO: Probe of Inflation and Cosmic Origins.*  
 ArXiv e-prints, arXiv:1902.10541.
- [59] • Abazajian K. N., Adshead P., Ahmed Z., et al. (incl. **van Engelen A.**) 2016.  
*CMB-S4 Science Book, First Edition.*  
 ArXiv e-prints, arXiv:1610.02743.
- [60] Alvarez M., Baldauf T., Bond J. R., et al. (incl. **van Engelen A.**) 2014.  
*Testing Inflation with Large Scale Structure: Connecting Hopes with Reality.*  
 ArXiv e-prints, arXiv:1412.4671.
- [61] Anderes E. and **van Engelen A.** 2012.  
*The Matter Spectral Density from Lensed CMB Observations.*  
 Statistical Challenges in Modern Astronomy V.