

# CURRICULUM VITAE

Adam Lidz

University of Pennsylvania  
Department of Physics & Astronomy  
e-mail: alidz@sas.upenn.edu

## EDUCATION

### **Columbia University**

Ph.D. in Physics, July 2004

M.A. in Physics, 2004

### **The University of Chicago**

B.A. in Physics with Honors, 1996

## RESEARCH AND EMPLOYMENT

July 2009 - Present: **Assistant Professor**, University of Pennsylvania, Department of Physics & Astronomy

Sept. 2007 - July 2009: **Postdoctoral Research Associate**, Harvard-Smithsonian Center for Astrophysics

Sept. 2004 - 2007: **ITC Postdoctoral Fellow**, Harvard-Smithsonian Center for Astrophysics

## PROFESSIONAL SERVICES

Referee for *Astronomical Journal*, *Astrophysical Journal*, *Monthly Notes of the Royal Astronomical Society*, and *Nature*: 2004 - present. NASA ATP grant reviewer (panel chair), NSF postdoctoral program reviewer, US-Israel Binational Science Foundation grant reviewer.

## STUDENTS ADVISED

Matthew Malloy (current), Jessie Taylor (current)

## TEACHING

Topics in Cosmology (Fall 2009, 2011), Survey of the Universe (Spring 2009, Spring 2010), Introduction to Astrophysics I (Fall 2010), Order of Magnitude Physics (Spring 2012)

## SELECTED TALKS

University of Chicago, KICP Seminar: February, 2012  
*CO Intensity Mapping*

University of Texas, Texas Cosmology Center Seminar: December, 2011  
*Hydrogen and Helium Reionization*

University of Kentucky, Physics Colloquium: October, 2011  
*First Light and Reionization*

University of Kentucky, Astrophysics Seminar: October, 2011  
*Hydrogen and Helium Reionization*

Berkeley, DACOTA workshop: August, 2011  
*CO Intensity Mapping*

Santa Fe Cosmology Workshop: July, 2011  
*Three Reionization Related Topics*

Dominion Radio Astronomical Observatory, Novel Radio Telescopes meeting: June, 2011  
*Models of Reionization*

Berkeley Theoretical Astrophysics Seminar: March, 2011  
*Reionization and the Redshifted 21 cm Line*

Aspen Center for Physics, 21 cm Cosmology Workshop: June, 2010  
*Cross-correlating 21 cm and Galaxy Surveys*

Aspen Center for Physics, 21 cm Cosmology Workshop: June, 2010  
*Semi-Numeric Models*

Penn State University, The First Galaxies, Quasars, and Gamma-ray Bursts meeting: June, 2010  
*Detecting the Rise and Fall of 21 cm Fluctuations*

The University of Maryland, Advances in Cosmology Workshop: May, 2010  
*The Rise and Fall of 21 cm Fluctuations*

The University of Chicago, KICP Seminar: May, 2010  
*Hydrogen and Helium Reionization*

Villanova University, Physics Colloquium: March, 2010  
*First Light and Reionization*

Institute for the Physics & Mathematics of the Universe, Reionization Workshop: December, 2009  
*Cross-correlating 21 cm and Galaxy Surveys*

The Institute for Advanced Study (Princeton): November, 2009  
*The Temperature of the IGM, Reionization, and the Lyman-alpha Forest*

University of Pennsylvania Astrophysics Seminar: October, 2009

*Hydrogen and Helium Reionization*

Stockholm, Reionization with Mult-frequency Datasets: August, 2009

*Cross-Correlating 21 cm and Galaxy Surveys*

Napa Galaxy Formation meeting: February, 2009

*The Temperature of the IGM and HeII Reionization*

University of Maryland, Shedding Light on Dark Matter: April, 2009

*Warm Dark Matter, the Temperature of the IGM, and the Ly- $\alpha$  Forest*

Fermilab, Astrophysics Seminar: November, 2008

*Future Probes of Hydrogen Reionization, Current Probes of Helium Reionization*

Harvard, ITC Lunch: October, 2008

*HeII Reionization and the HI Ly- $\alpha$  Forest*

IAP, XXIVth IAP Colloquium: July, 2008

*Detecting the Rise and Fall of 21 cm Fluctuations*

Fermilab, CMBpol Workshop: Theory and Foregrounds: June, 2008

*Reionization Science*

Harvard CfA, Sackler Conference on 21 cm Cosmology: May, 2008

*What can we Learn from First Generation 21 cm Surveys?*

Columbia University ISCAP seminar: April, 2008

*Detecting the Rise and Fall of 21 cm Fluctuations*

Brown University Astrophysics Seminar: February, 2008

*First Light and Reionization*

University of Pennsylvania Astrophysics Seminar: February, 2008

*Deciphering the Nature of Hydrogen Reionization*

Carnegie Mellon Astrophysics Colloquium: February, 2008

*First Light and Reionization*

MIT Astrophysics Colloquium: February, 2008

*Deciphering the Nature of Hydrogen Reionization*

CITA Seminar: November, 2007

*Probing Hydrogen Reionization*

UCSB Astrophysics Seminar: October, 2007

*Probing Hydrogen Reionization*

Ohio State University, CCAP AGN Workshop: October, 2007

*Quasar Clustering Review*

MWA Collaboration Meeting, CfA: June, 2007

*Optimizing the MWA to Constrain Reionization*

CCAP Seminar, Ohio State University: April, 2007

*Probing Hydrogen Reionization*

MWA Collaboration Meeting, CfA: April, 2007

*How I Learned to Stop Worrying and Love  $\sim 1$  Decade in Scale*

Berkeley Cosmology Seminar: March, 2007

*Probing Hydrogen Reionization*

University of Maryland, Particle Theory Seminar: March, 2007

*Probing Hydrogen Reionization*

MWA Collaboration Meeting, CfA: December, 2006

*Recent Results*

Santa Fe 2006 Cosmology Workshop: July, 2006

*Hydrogen Reionization Review Talk*

Berkeley Cosmology Seminar: March, 2005

*J, T, and Delta from the Lyman Alpha Forest*

SDSS Collaboration Meeting, NMSU: March, 2004

*Clustering in the Lyman Alpha Forest*

Santa Fe 2003 Cosmology Workshop: July, 2003

*Cosmology with the Lyman Alpha Forest*

Los Alamos National Laboratory Theory Seminar: July, 2003

*Probing Cosmology with the Lyman Alpha Forest*

## PUBLICATIONS and PRE-PRINTS

(All publications are refereed, except for those with an asterisk.)

- \*[32] Zahn, O., Reichardt, C. L., Shaw, L., Lidz, A., et al. 2011, *Cosmic Microwave Background Constraints on the Duration and Timing of Reionization Using Data from the South Pole Telescope*, **ApJ**, submitted, **arXiv:1111.6386** [16 pages]
- [31] Lunnan, R., Vogelsberger, M., Frebel, A., Hernquist, L., Lidz, A., & Boylan-Kolchin, M. 2012, *The Effects of Patchy Reionization on Satellite Galaxies of the Milky Way*, **ApJ**, **746**, **109** [11 pages]
- [30] Lidz, A., Furlanetto, S. R., Oh, S. P., Aguirre, J., Chang, T.-C., Doré, O., & Pritchard, J. R. 2011, *Intensity Mapping with Carbon Monoxide Emission Lines and the Redshifted 21 cm Line*, **ApJ**, **741**, **70** [19 pages]
- [29] McQuinn, M., Hernquist, L., Lidz, A., & Zaldarriaga, M. 2011, *The Signatures of Large-scale Temperature Fluctuations in the Lyman-alpha Forest*, **MNRAS**, **415**, **977** [16 pages]
- [28] Furlanetto, S. R., & Lidz, A. 2011, *Constraints on Quasar Lifetimes and Beaming from the HeII Ly- $\alpha$  Forest*, **ApJ**, **735**, **117** [8 pages]
- [27] LoVerde, M., Marnierides, S., Hui, L., Menard, M., & Lidz, A. 2010, *Gravitational Lensing as Signal and Noise in Lyman-alpha Forest Measurements*, **Phys. Rev. D**, **82**, **103507** [18 pages]
- [26] Lidz, A., Faucher-Giguère, C. A., Dall'Aglio, A., McQuinn, M., Fechner, C., Zaldarriaga, M., Hernquist, L., & Dutta, S. 2010, *A Measurement of Small Scale Structure in the  $2.2 \leq z \leq 4.2$  Lyman-alpha Forest*, **ApJ**, **718**, **199** [33 pages]
- [25] Faucher-Giguère, C. A., Lidz, A., Zaldarriaga, M., & Hernquist, L. 2009, *A New Calculation of the Ionizing Background and the Effects of HeII Reionization*, **ApJ**, **703**, **1416** [28 pages]
- [24] McQuinn, M., Lidz, A., Zaldarriaga, M., Hernquist, L., Hopkins, P. F., Dutta, S., & Faucher-Giguère, C. A. 2009, *HeII Reionization and its Effect on the IGM*, **ApJ**, **694**, **842** [25 pages]
- [23] Lidz, A., Zahn, O., Furlanetto, S. R., McQuinn, M., Hernquist, L., & Zaldarriaga, M. 2009, *Probing Reionization with the 21 cm-Galaxy Cross Power Spectrum*, **ApJ**, **690**, **252** [15 pages]
- [22] Dijkstra, M., Lidz, A., Pritchard, J. R., Greenhill, L. J., Mitchell, D. A., Ord, S. M., & Wayth, R. B. 2008, *On the Detectability of the Hydrogen 3-cm Fine-Structure Line from the Epoch of Reionization*, **MNRAS**, **390**, **1430** [7 pages]
- [21] Faucher-Giguère, C. A., Lidz, A., Hernquist, L., & Zaldarriaga, M. 2008, *Evolution of the Intergalactic Opacity: Implications for the Ionizing Background, Cosmic Star Formation, and Quasar Activity*, **ApJ**, **688**, **85** [23 pages]
- [20] Faucher-Giguère, C. A., Lidz, A., Hernquist, L., & Zaldarriaga, M. 2008, *A Flat Photoionization Rate at  $2 \leq z \leq 4.2$ : Evidence for a Stellar-Dominated UV Background and against a Decline*

*of Cosmic Star Formation beyond  $z \sim 3$* , **ApJL**, **682**, **9** [4 pages]

\*[19] Faucher-Giguère, C. A., Lidz, A., & Hernquist, L. 2008, *Numerical Simulations Unravel the Cosmic Web: Past, Present, and Future*, **Science** **319**, **52** [4 pages]

[18] Faucher-Giguère, C. A., Prochaska, J. X., Lidz, A., Hernquist, L., & Zaldarriaga, M. 2008, *A Direct Precision Measurement of the Intergalactic Lyman-Alpha Opacity at  $2 \leq z \leq 4.2$* , **ApJ** **681**, **831** [25 pages]

[17] McQuinn, M., Lidz, A., Zaldarriaga, M., Hernquist, L., & Dutta, S. 2008, *Probing the Neutral Fraction of the IGM with GRBs During the Epoch of Reionization*, **MNRAS**, **388**, **1101** [10 pages]

[16] Lidz, A., Zahn, O., McQuinn, M., Zaldarriaga, M., & Hernquist, L. 2008, *Detecting the Rise and Fall of 21 cm Fluctuations with the Murchison Widefield Array*, **ApJ** **680**, **962** [13 pages]

[15] Dijkstra, M., Lidz, A., & Wyithe, S. 2007, *The Impact of the IGM on High-Redshift Lyman-alpha Emission Lines*, **MNRAS**, **377**, **1175** [12 pages]

[14] Faucher-Giguère, C. A., Lidz, A., Zaldarriaga, M., & Hernquist, L. 2008, *The Line-of-Sight Proximity Effect and the Mass of Quasar Host Halos*, **ApJ** **673**, **39** [23 pages]

[13] Lidz, A., McQuinn, M., Zaldarriaga, M., Hernquist, L., & Dutta, S. 2007, *Quasar Proximity Zones and Patchy Reionization*, **ApJ**, **670**, **39** [21 pages]

[12] Hopkins, P.F., Lidz, A., Hernquist, L., Coil, A., Myers, A.D., Cox, T.J., & Spergel, D.N. 2007, *The Co-Formation of Spheroids and Quasars Traced in their Clustering*, **ApJ**, **662**, **110** [21 pages]

[11] Furlanetto, S.R., & Lidz, A. 2007, *The Cross-Correlation of High-Redshift 21 cm and Galaxy Surveys*, **ApJ**, **660**, **1030** [9 pages]

[10] McQuinn, M., Lidz, A., Zahn, O., Dutta, S., Hernquist, L., & Zaldarriaga, M. 2007, *The Morphology of HII Regions During Reionization*, **MNRAS**, **377**, **1043** [21 pages]

[9] Lidz, A., Zahn, O., McQuinn, M., Zaldarriaga, M., Dutta, S., & Hernquist, L. 2007, *Higher Order Contributions to the 21 cm Power Spectrum*, **ApJ**, **659**, **865** [12 pages]

[8] Zahn, O., Lidz, A., McQuinn, M., Dutta, S., Hernquist, L., Zaldarriaga, M., & Furlanetto, S.R. 2007, *Simulations and Analytic Calculations of Bubble Growth During Hydrogen Reionization*, **ApJ**, **654**, **12** [15 pages]

[7] Lidz, A., Oh, S.P., & Furlanetto, S.R. 2006, *Have we Detected Patchy Reionization in Quasar Spectra?*, **ApJL**, **639**, **47** [4 pages]

[6] Lai, K., Lidz, A., Hernquist, L., & Zaldarriaga, M. 2006, *The Impact of Temperature Fluctuations on the Lyman Alpha Forest Power Spectrum*, **ApJ**, **644**, **61** [10 pages]

- [5] Lidz, A., Hopkins, P.F., Cox, T.J., Hernquist, L., & Robertson, B. 2006, *The Luminosity Dependence of Quasar Clustering*, **ApJ**, **641**, **41** [10 pages]
- [4] Lidz, A., Heitmann, K., Hui, L., Habib, S., Rauch, M., & Sargent, W.L.W. 2006, *Tightening Constraints from the Lyman Alpha Forest with the Flux Probability Distribution*, **ApJ**, **638**, **27** [18 pages]
- [3] Dijkstra, M., Lidz, A., & Hui, L. 2004, *Beyond Lyman-alpha: Constraints and Consistency Tests from the Lyman-beta Forest*, **ApJ**, **605**, **7** [7 pages]
- [2] Abazajian, K. et al. 2003, *The First Data Release of the Sloan Digital Sky Survey*, **AJ**, **126**, **2081** [6 pages]
- [1] Lidz, A., Hui, L., Zaldarriaga, M., & Scoccimarro, R. 2002, *How Neutral is the Intergalactic Medium at  $z \sim 6$ ?*, **ApJ**, **579**, **491** [9 pages]