Curriculum Vitae – Andrea Petri

Contact Information

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Education

Doctor of Philosophy (PhD), Physics — May 2017
Columbia University
Research advisors: Prof. Zoltán Haiman, Prof. Morgan May

Master of Philosophy, Physics — May 2014
Columbia University

Master of Arts, Physics — May 2013
Columbia University

Laurea Specialistica, Theoretical Physics — June 2011
Scuola Normale Superiore, Pisa, Italy
Thesis advisor: Prof. Andrea Ferrara

Publications

Validity of the Born approximation for beyond-Gaussian weak lensing observables
A. Petri, Z. Haiman, M. May, Phys. Rev. D **95**, 123503 (2017)

Do dark matter halos explain lensing peaks?
J.M. Zorrilla, Z. Haiman, D. Hsu, A. Gupta, A. Petri, Phys. Rev. D **94**, 083506 (2016)

CMB Lensing Beyond the Power Spectrum: Cosmological Constraints from the One-Point PDF and Peak Counts
J. Liu, J. Coin Hill, B. D. Sherwin, A. Petri, V. Bohm, Z. Haiman, Phys. Rev. D **94**, 103501 (2016)

Cosmology with photometric weak lensing surveys: constraints with redshift tomography of convergence peaks and moments
A. Petri, M. May, Z. Haiman, Phys. Rev. D **94**, 063534 (2016)

Mocking the Weak Lensing universe: the LensTools python computing package
A. Petri; Astronomy & Computing, Elsevier, **17**, 73-79 (2016)

Consequences of CCD imperfections for cosmology determined by weak lensing surveys: From laboratory measurements to cosmological parameter bias
Y.Okura, A. Petri, M.May, A.Plazas, T.Tamagawa; Astrophys. Journal, 825-1, **61** (2016)

Sample variance in weak lensing: how many simulations are required?
A. Petri, Z.Haiman, M.May; Phys. Rev. D **93**, 063524 (2016)

Emulating the CFHTLenS weak lensing data: Cosmological constraints from moments and Minkowski functionals
A. Petri, J. Liu, Z.Haiman, M.May, L.Hui, J.M.Kratochvil; Phys. Rev. D **91**, 103511 (2015)

Cosmology constraints from the weak lensing peak counts and the power spectrum in CFHTLenS data
J.Liu, A. Petri, Z.Haiman, L.Hui, J.M.Kratochvil, M.May; Phys. Rev D. **91**, 063507 (2015)

Impact of spurious shear on cosmological parameter estimates from weak lensing observables
A. Petri, M.May, Z.Haiman, J.M.Kratochvil; Phys. Rev. D **90**, 123015 (2014)

Cosmology with Minkowski Functionals and moments of the weak lensing convergence field
A. Petri, Z.Haiman, L.Hui, M.May, J.M.Kratochvil; Phys. Rev. D **88**, 123002 (2013)

Supermassive black hole ancestors
A. Petri, A.Ferrara, R.Salvaterra; Mon. Not. R. Astron. Soc. **422**, 1690-1699 (2012)

Awards

Recipient of the Columbia GSAS Joseph C. Pfister Fellowship for academic qualifications and contributions (May 2017)

Co-recipient of the Allan M. Sachs Teaching Award for contributions to the educational programs in the Columbia University Physics Department (May 2016)

Bronze medalist, 37th International Physics Olympiad, Singapore (July 2006)

Peer review experience

Served as peer reviewer for the American Astronomical Society (AAS) and for the MNRAS journal

Teaching experience

Co-Instructor, Science Honors Program 2012-2017
Columbia University
Introduction to Modern Cosmology for high school students

Graduate student instructor 2011-2017
Physics Department, Columbia University

Introductory Physics Lab (pre-medical)	Fall 2011, Spring 2012
Introductory Physics Lab (engineers)	Fall 2012, Spring 2013
Physical Cosmology (TA, grading)	Fall 2012
Particle Astrophysics and Cosmology (TA, recitations)	Spring 2013
EKA Advanced Physics Laboratory (TA)	Fall 2013-Spring 2017
Particle Astrophysics and Cosmology (TA, grading)	Spring 2015
Particle Astrophysics and Cosmology (TA, recitations, homework solutions writeup)	Spring 2016
Intro to thermodynamics and electromagnetism (TA, recitations)	Spring 2017

Talks	Invited: Cosmology Lunch, Princeton University	9/26/2016
	Invited: Cosmology Seminar, LBNL	9/12/2016
	Contributed: LSST DESC collaboration meeting, SLAC	3/9/2016
	Contributed: LSST DESC collaboration meeting, Argonne National Laboratory	10/28/2015
	Contributed: AstroFest 2015, Columbia University	9/11/2015
	Contributed: Santa Fe Cosmology Workshop	7/17/2014
	Contributed: 27th Symposium on Relativistic Astrophysics Dallas, TX	12/12/2013
Posters	Columbia Data Science Institute Bi-Annual Symposium	4/1/2015
Positions	**Graduate Research Assistant**, Columbia University	2011-2017
	Summer Associate, Morgan Stanley, New York	Summer 2015, Summer 2016
References	Zoltán Haiman, Professor, Columbia University	zoltan@astro.columbia.edu
	Morgan May, Professor, Brookhaven National Laboratory Columbia University	may@bnl.gov
	Lam Hui, Professor, Columbia University	lh399@columbia.edu
	Andrea Ferrara, Professor, Scuola Normale Superiore Pisa, Italy	andrea.ferrara@sns.it