

CURRICULUM VITAE: RAVI K. SHETH (April 2020)

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Date of birth: 20 February 1968 Place of birth: Milwaukee, WI, USA
Nationality: USA/Italy

Faculty Appointments:

2016 – 2017	Associate Chair for Graduate Affairs	
2009 –	Professor	University of Pennsylvania
2007 – 2010	Associate Chair for Graduate Affairs	
2007 – 2009	Associate Professor	University of Pennsylvania
2005 – 2007	Assistant Professor	University of Pennsylvania
2002 – 2004	Assistant Professor	University of Pittsburgh

Research Experience:

1999 – 2001	Fermilab, Batavia, IL, U.S.A.
1996 – 1999	MPI für Astrophysik, Garching, Germany
1994 – 1996	Astronomy Department, U.C. Berkeley, U.S.A.

Higher Education:

1990 – 1994	Ph.D. in Astrophysics	Institute of Astronomy and Jesus College
	Marshall Scholar	University of Cambridge
1986 – 1990	BSc (High Honors) in Physics	Haverford College
	Dana S. McGill Scholar	
1983 – 1986	Four 'IB' HL certificates	Kodaikanal International School, India

Visiting Positions:

Vikram Sarabhai Chair	Indian Nat. Sci. Acad.	India (2017–2018)
Associate Member	Simons CCA	New York (2016–)
Visiting Professor	JMI, Delhi	India (2016–2018)
Staff Associate	ICTP, Trieste	Italy (2015–2023)
Senior Associate	ICTS, Bangalore	India (2014–2016)
Visiting Professor	Institut Henri Poincaré	France (November 2013)
Visiting Professor	LUTH - Meudon Observatory	France (June 2013)
Senior Visiting Scholar	AIMS, Cape Town	South Africa (2012–2015)
Visiting Professor	LUTH - Meudon Observatory	France (June 2012)
Visiting Professor	GEPI - Meudon Observatory	France (June 2011)
Senior Research Scientist	ICTP, Trieste	Italy (2011–2012)
Visiting Scholar	IPhT-CEA, Saclay	France (June 2010)
Visiting Professor	APC, Paris 7 Diderot	Paris, France (June 2009)

Research interests/highlights:

I develop physical models and statistical methods which allow the data from large scale galaxy and cluster surveys to constrain models of galaxy formation and cosmology.

I have played a leading role in the development of what is now the standard model of nonlinear clustering and biasing: the Halo Model. It is the currently the best language for interpreting measurements of weak lensing, the thermal and kinematic Sunyaev-Zeldovich effects, and how galaxy clustering depends on galaxy type, both in real and in redshift space. In 2004, I showed that dark matter halo formation is correlated with environment; I also discussed why, and pointed out that understanding this correlation is necessary if the Halo Model is to be used as a precision tool for cosmology. The effect is now called Assembly Bias. I have also used physically motivated models to illustrate the ubiquity of what are now called scale-dependent bias, tidal bias and velocity bias. This has led to new insights which are essential for placing unbiased constraints on cosmological parameters from biased tracers of the cosmic web. E.g., in 2016, my collaborators and I described a more general standard ruler for cosmological measurements.

My work on halo abundances and clustering forms the basis of methods which use clusters (e.g., X-ray luminosities, temperatures, the Sunyaev-Zeldovich effects, galaxy velocity dispersions) to study cosmology. From 2004 to 2006 I extended the approach to predict how the morphology (sheets, filaments, voids) rather than simply the density, of large scale structure evolves. I have since studied how these predictions are modified if the initial conditions were non-Gaussian, or if the force of gravity does not decrease as the inverse-square of separation. In 2020, I extended these methods to estimate the abundance of Primordial Black Holes.

In 1996 I solved an old combinatorial problem on the partitions of integers which turns out to have interesting connections to coagulation and branching processes, and the spread of disease. In 1998 I showed how to extend the approach to model the counts in cells distribution in the nonlinear density field. In 2002, I developed a new method for estimating the evolution of the optical depth in the Lyman-alpha forest. In 2005, I showed how to use Mark Correlations to quantify and model environmental trends in the galaxy distribution. In 2007 my collaborators and I showed that local black hole samples are a biased subset of all galaxies, a study that has seen renewed interest since 2016. Between 2007-2009 I developed methods for making unbiased estimates of the galaxy luminosity function and galaxy scaling relations from photometric redshift surveys. My methods can be applied to studies where peculiar velocities are an important component of the observed redshift: these include using star counts to model the structure of our galaxy, and estimating the luminosity function of dwarf galaxies in our local (≤ 50 Mpc) neighborhood. In 2018 I showed that self-consistently accounting for stellar population gradients yields good agreement between dynamical (Jeans equation) and stellar population based estimates of the stellar masses in galaxies.

In 2013, I showed how to unify the Excursion Set and Peaks Theory descriptions of the Cosmic Web, and provided the first quantitative predictions for the effects of tides on the large scale structure of biased tracers. My work on how tidal fields help spin the Cosmic Web has led me back to my work on a particularly rich problem. In 1996 I showed how to map the problem of enumerating the forest of halo merger history trees into a combinatorics problem on the partitions of integers. My solution led to a flurry of activity in the probabilistic literature on the Additive Coalescent. I have recently returned to this problem in the context of Gaussian walks with correlated steps crossing a stochastic barrier whose statistics need not be Gaussian; like my work in 1996, this problem also pushes the boundaries of what is known in the literature on stochastic processes.

Graduate Students (* denotes faculty/research scientist):

*U. Abbas	Pitt→Marseille→Torino	Galaxy clustering and environment
R. Skibba	Pitt→...→UCSD	Mark correlation functions
*L. Rimoldini	Pitt→...→Geneva	Clustering of absorption line systems
*G. Rossi	Penn→...→Sejong U.	Distance errors in cosmology
T. Y. Lam	Penn→...→DBank	Non-gaussian statistics in cosmology
*M. Martino	Penn→...→St.Benedict	Environmental effects and non-standard models
*M. Caler	Penn→ West Chester U	Absorption line systems
*J. Moreno	Penn→...→Pomona	Merger trees and quasars
N. Frusciante	SISSA→IAP→Lisboa	Local and nonlocal bias
E. Castorina	SISSA→UCBerkeley→ CERN	Stochastic bias and neutrinos
E. Massara	SISSA→...→ Waterloo	Neutrinos and voids in modern cosmology
J. Shi	SISSA→KIAA, Beijing → IPMU	Correlations with environment
F. Nikakhtar	Penn	Baryon acoustic oscillations

Post-graduate Scholar Sponsor (* denotes faculty):

*J. Colberg	Pitt→...→ UHartford	Voids; Theorist's Virtual Observatory
*D. Vanden Berk	Pitt→...→ St. Vincent	Quasars and AGN
*R. Smith	Penn→...→ Sussex	Halos, perturbation theory and BAOs
*L. Ostorero	Penn→ Torino	
*P. Pápai	ICTP→ PSU, Thailand	Anisotropic clustering
*A. Paranjape	ICTP→ ETH→ IUCAA	Excursion set peaks
*E. Sefusatti	ICTP→...→ INAF Trieste	Fast mocks for cosmology
S. Anselmi	ICTP→ Case→ IAP → Technion	Baryon acoustic oscillations
*M. Musso	Penn→ MPA→ EAIFR, Rwanda	Random walks and halo formation

Grants and Awards:

Co-I: NASA-ATP (2011-2015):

Galaxies, halos and mass as cosmological tests (\$417k)

PI: NSF (2009-2013):

Stochastic bias and ellipsoidal collapse (\$407k)

Co-I: Westerbork Radio Telescope (2006-2007):

The gas content of void galaxies (195 hours)

PI: NSF (2005-2009):

Accounting for distance errors in cosmology (\$295k)

Joint PI: HST Cycle 14 Archival:

Mark correlations and galaxy evolution (\$20k of \$80k)

Co-I: HST Cycle 14 Archival (PI: D. Turnshek):

Are our ideas about quasar absorption lines consistent with galaxy images?

Co-I: HST Cycle 13 Snapshot (PI: M. Bernardi):

The most massive galaxies in the Universe (\$0k of \$113k)

PI: NASA-ADP (2004-2007):

Hot and cold spots in the WMAP sky (\$135k)

PI: NSF (2003-2007):

Substructure and the halo model of large scale structure (\$235k)

Joint-PI: US-Israel BSF (2003-2007):

Cosmology with the Lyman-alpha forest (\$37k)

PI: NASA-ATP (2003-2006):

Marked correlation functions and the evolution of galaxy biasing (\$290k)

PI: NCSA-PSC TCS1 (2003-2004):

Numerical simulations of self-similar gravitational clustering (35k units)

PI: UPitt FRG II (2002-2005):

Ellipsoidal collapse and the shapes of objects (\$3k)

Courses Developed and Taught at Penn:

Fall 2020	Introduction to Astrophysics I	46 science majors
Fall 2019	Introduction to Astrophysics I	33 science majors
Spring 2019	Cosmology	10 PhD students
Fall 2018	The Big Bang and Beyond	18 freshman
Spring 2018	Survey of the Universe	35 non-science majors
Fall 2017	The Big Bang and Beyond	35 freshman
Spring 2017	Cosmology	10 PhD students
Fall 2016	Survey of the Universe	70 non-science majors
Spring 2016	Physics Principles II	70 physics/engineering majors
Fall 2015	Survey of the Universe	70 non-science majors
Spring 2015	Physics Principles II	110 physics/engineering majors
Fall 2014	The Big Bang and Beyond	25 freshman
Fall 2013	Survey of the Universe	72 non-science majors
Spring 2013	Survey of the Universe	125 non-science majors
Spring 2010	The Big Bang and Beyond	60 non-science majors
Fall 2009	The Big Bang and Beyond	25 freshman
Fall 2008	Survey of the Universe	60 non-science majors
Spring 2008	The Big Bang and Beyond	15 non-science majors
Fall 2007	The Big Bang and Beyond	13 non-science majors
Spring 2007	Life in the Universe	19 non-science majors
Fall 2006	The Big Bang and Beyond	115 non-science majors
Spring 2006	Life in the Universe	26 non-science majors
Fall 2005	Physics I: Mechanics and Waves	83 physics/engineering majors
Spring 2005	Mechanics, Dynamics and Chaos	4 graduate students

Courses Developed and Taught at Pitt:

Spring 2004	Stonehenge to Hubble	100 non-science majors
Fall 2003	Introduction to Astronomy	100 physics majors
Spring 2003	Galactic and Extra-galactic Astronomy	7 graduate students
Fall 2002	Introduction to Astronomy	100 physics majors
Spring 2002	Radiative Processes in Astrophysics	7 graduate students

Courses Developed and Taught in Trieste:

Summer 2014	Cosmology	ICTP Diploma
Spring 2012	Cosmology	ICTP Diploma
Spring 2012	Large Scale Structure	SISSA PhD

Courses Developed and Taught Elsewhere:

Lecturer	Distances in cosmology	UPenn (June 2020)
Lecturer	Observational probes of cosmology	EAI FR, Kigali (August 2019)
Lecturer	Large scale structure	ICTP, Trieste (June 2018)
GIAN Lecturer	Nonlinear structure formation	JMI, Delhi (April 2018)
Lecturer	Structure formation in cosmology	IPM, Tehran (August 2017)
Lecturer	Nonlinear structure formation	ON, Rio de Janeiro (August 2016)
Lecturer	Dark matter structures	IFT, Sao Paulo (July 2016)
Lecturer	Statistical methods in astronomy	University of Padova (May 2016)
Lecturer	Formation of cosmic structures	IUCAA, Pune (February 2016)
Lecturer	Structure formation	Bogota, Columbia (November 2015)
Lecturer	Large scale structure	SAIFR, Sao Paulo (December 2014)
Lecturer	Dark matter structures	ISAPP, Belgirate (July 2014)
Lecturer	Statistical methods in astronomy	University of Padova (May 2014)
Lecturer	Statistical approaches in cosmology	IHP, Paris (November 2013)
Lecturer	Galaxy surveys	TIFR, India (December 2012)
Lecturer	Structure formation	STIAS, South Africa (Jan 2012)
Visiting Lecturer	Nonlinear clustering	HRI, India (February 2009)
Lecturer	XIII BSCG	Rio de Janeiro, Brazil (July 2008)
PIRE Lecturer	Hierarchical structure formation	Santiago, Chile (March 2007)
Lecturer	Galaxies and Cosmology	University of Padova (January 2007)
NOVA Lecturer	The halo model	The Netherlands (November 2006)

Department/University Service:

2019 Penn GRIP host to two Penn undergraduate students
2019 Department Ad Hoc Committee for Promotion of M. Sako
2018- Mentoring Committee for R. Sanderson
2016 – 2017 Graduate Chair
2017 Department Ad Hoc Committee for Promotion of A. Sweeney
2015 – 2016 Department Ad Hoc Committee for Promotion of J. Khoury
2015 – Graduate Committee
2014 – CURF Faculty Fellowship Review Committee
2014 – 2018 Department Grievance Committee
2013 – 2014 Department Ad Hoc Committee for Promotion of A. Lidz
2009 – 2011 Committee on Undergraduate Academic Standing
2007 – 2011 Graduate Chair
2007 – 2011 Department Planning Committee
2007 Particle-Cosmology Faculty Search Committee
2006 – 2011 Overseer Penn Dark Energy Survey Account
2006 Graduate Committee
2006 Colloquium Committee
2006 Astronomy Seminar Organizer
2005 – 2008 Astro Faculty Search Committee
2005 – 35 PhD Thesis Committees (other than for my own students)

External Service:

- 2020 NASA TCAN and ADAP Grant Review Panels
- 2020 NASA HST Grant Review Panel
- 2020 Dutch Research Council Reviewer
- 2020 Editorial Board: Universe
- 2019 NASA ATP Grant Review Panel
- 2019 NSF AAPF Grant Review Panel
- 2018 – Scientific Council, East Africa Institute for Fundamental Physics, Rwanda
- 2018 NASA HST Grant Review Panel
- 2017 NASA ATP Grant Review Panel
- 2017 – ASI, INFN, INAF (Italian Space, High Energy, Nuclear, Astro) Reviewer
- 2017 DFG (German Research Foundation) Reviewer
- 2017 NSF Physics Frontiers Centers Reviewer
- 2015 NASA ADAP Grant Review Panel
- 2014 – 2017 NOAO Time Allocation Committee: Extra-Galactic Chair
- 2014 NSF COS2 Grant Review Panel
- 2013 NASA ATP Grant Review Panel
- 2012 – Kaufman Science Advisory Board
- 2012 – IAU-OAD Task Force 1 (Research and Universities)
- 2009 NASA ATP Grant Review Panel
- 2008 NOAO Extragalactic Time Allocation Committee
- 2008 – 2017 Editorial Board: Advances in Astronomy
- 2007 – 2008 Dark Energy Survey Publications Committee
- 2007 – PhD reviewer for students in France, India, Israel, Italy, Spain, The Netherlands
- 2007 NASA Spitzer Proposal Review Panel
- 2006 – 2007 NSF Grant Review Panel
- 2004 NASA Grant Review Panel
- 2004 – Public lectures: Philadelphia, Pittsburgh, Rio de Janeiro
- 1995 – Referee for AA, ApJ, JCAP, MNRAS, New. Ast., J Phys A, PRD

Organization of International Conferences:

- Convener - Cosmology Session: PASCOS 2020
MPIK, Heidelberg, Germany (13-17 July 2020 - canceled/pandemic)
- Co-Director: ICTP Cosmology Summer School
ICTP, Trieste, Italy (11-22 May 2020 - canceled/pandemic)
- Co-Organizer: Dynamics of Large Scale Structure Formation
Munich Institute for Astro- and Particle Physics, Germany (1-26 July 2019)
- Scientific Organizing Committee: Assembly Bias
Shanghai Astrophysical Observatory, China (10-14 June 2019)
- Organizing Committee: Shedding Light on the Dark Universe with ELTs
ICTP, Trieste, Italy (2-6 July 2018)
- Co-Director: ICTP Cosmology Summer School
ICTP, Trieste, Italy (18-29 June 2018)

Scientific Organizing Committee: Galaxy evolution across time
Paris, France (12-16 June 2017)

Organizing Committee: ICTP Workshop on Cosmology with Radio Surveys
ICTP, Trieste, Italy (18-21 June 2016)

Co-Director: ICTP Cosmology Summer School
ICTP, Trieste, Italy (4-15 June 2016)

Organizing Committee: Workshop on Galaxies in the cosmic web
Lorentz Center, The Netherlands (7-11 March 2016)

Co-Director: School and Workshop on Cosmology and galaxy formation
IUCAA, Pune, India (1-12 February 2016)

Organizing Committee: Workshop on Unbiased constraints from biased tracers
Institute for Advanced Studies, Princeton (24-26 September 2015)

Convener: Cosmology Sessions at TAUP 2015
Torino, Italy (7-11 September 2015)

Co-Director: ICTP Advanced School on Cosmology
ICTP, Trieste, Italy (18-29 May 2015)

Organizing Committee: Joint SAIFR/ICTP Cosmology School
SAIFR, Sao Paulo, Brazil (1-13 December 2014)

Organizing Committee: ICTP Cosmology Summer School/Large Scale Structure Workshop
ICTP, Trieste, Italy (4-21 August 2014)

Organizing Committee: Mini-symposium on High Energy Physics and Phenomenology
ICTP, Trieste, Italy (14 April 2014)

Organizing Committee: Halo bias: Nonlinear, nonlocal and non-Gaussian
ICTP, Trieste, Italy (8-11 October 2013)

Organizing Committee: New light in cosmology from the CMB
ICTP, Trieste, Italy (22 July - 2 August 2013)

Organizing Committee: Recent developments in nuclear and astroparticle physics
ICTP, Trieste, Italy (19-23 November 2012)

Organizing Committee: The physics of star formation and its role in galaxy evolution
ICTP, Trieste, Italy (16-18 October 2012)

Organizing Committee: ICTP Cosmology Summer School/Large Scale Structure Workshop
ICTP, Trieste, Italy (16 July - 3 August 2012)

Organizing Committee: Perturbative approaches to redshift space distortions
Pauli Institute, ITP, Zurich, Switzerland (11-13 July 2012)

Organizing Committee: Joint ICTP-SISSA Workshop on Interacting Galaxies and Binary Quasars
ICTP, Trieste, Italy (2-5 April 2012)

Co-Director, Lecturer: Cape Town International Cosmology School
STIAS, Stellenbosch, South Africa (15-28 January 2012)

Organizer, Lecturer: School and Conference on Analytical and Computational Astrophysics
ICTP, Trieste, Italy (14-25 November 2011)

International Organizing Committee: 3rd Galileo–Xu Guangqi Meeting
Beijing, China (11-15 October 2011)

Organizing Committee: Workshop on Infrared Modifications of Gravity
ICTP, Trieste, Italy (26-30 September 2011)

Scientific Organizing Committee: Galaxy Evolution and Environment
Kuala Lumpur, Malaysia (30 March-3 April 2009)

Organizing Committee: Cosmological Voids
Dutch Royal Academy of Sciences, Amsterdam (11-15 December 2006)

Invited Chair: Galaxies and Large Scale Structure
XI Marcel Grossmann Meeting on General Relativity, Berlin, (23-29 July 2006)

Organizing Committee: Workshop on Voids
Aspen Center for Physics (28 May-18 June 2006)

Invited Chair: Galaxies and Large Scale Structure
X Marcel Grossmann Meeting on General Relativity, Rio de Janeiro (20-26 July 2003)

Organizing Committee: Structure formation and dark matter halos
Fermilab, Batavia, IL (10-12 May 2001)

Organizing Committee: Evolution of large scale structure
The first MPA-ESO conference in Garching, Germany (2-7 August 1998)

Books and Invited Reviews:

1. Galaxies and large scale structure: Lecture notes from the XIIIth Brazilian School on Cosmology and Gravitation.
Ravi K. Sheth. 2009.
AIP Conference Proceedings, Volume 1132, pp. 158–198. Eds. M. Novello & S. Perez.
2. The Halo Model of Large Scale Structure
Asantha Cooray & **Ravi K. Sheth.** 2002
Physics Reports, 372, 1–129.
3. Evolution of large scale structure: From recombination to Garching
Eds. A. J. Banday, **Ravi K. Sheth** and L. da Costa. 1999
Proceedings of the MPA-ESO conference in Garching, Germany (2-7 Aug. 1998)

Primary Refereed Publications:

188. Halo bias for excursion set peaks in energy
M. Musso & **Ravi K. Sheth.** 2020
Monthly Notices of the Royal Astronomical Society, in prep

187. The Linear Point standard ruler in halo-based mock galaxy catalogues
F. Nikakhtar, S. Anselmi, P.-S. Corasaniti, G. D. Starkman, **Ravi K. Sheth** and I. Zehavi.
2020
Physical Review D, in prep
186. The Linear Point standard ruler: Reconstruction
F. Nikakhtar, S. Anselmi, P.-S. Corasaniti, G. D. Starkman, **Ravi K. Sheth** and I. Zehavi.
2020
Physical Review D, in prep
185. Excursion set peaks in energy as a model for halos
M. Musso & **Ravi K. Sheth**. 2020
Monthly Notices of the Royal Astronomical Society, revised (arXiv:1907.09147)
184. The effects of massive neutrinos on the linear point of the correlation function
G. Paribelli, S. Anselmi, M. Viel, C. Carbone, F. Villaescusa-Navarro, P. S. Corasaniti, Y. Rasera, **Ravi K. Sheth**, G. Starkman, and I. Zehavi. 2020
JCAP, in press (arXiv:2007.10345)
183. Analytical thresholds for black hole formation in general cosmological backgrounds
A. Escrivà, C. Germani & **Ravi K. Sheth**. 2020
Physical Review D, in press (arXiv:2007.05564)
102. On the presence of a universal acceleration scale in elliptical galaxies
K.-H. Chae, M. Bernard, H. Domínguez-Sánchez and **Ravi K. Sheth**. 2020
The Astrophysical Journal Letters, 903, L31 (6 pages)
181. Galaxy properties as revealed by MaNGA. III. Kinematic profiles and stellar population gradients in S0s
M. Bernardi, H. Domínguez Sánchez, F. Nikakhtar, B. Margalef-Bentabol & **Ravi K. Sheth**.
2020
Monthly Notices of the Royal Astronomical Society, 495, 2894–2908
180. The Stellar Mass Fundamental Plane: The virial relation and a thin plane for slow rotators
M. Bernardi, H. Domínguez Sánchez, B. Margalef-Bentabol, F. Nikakhtar & **Ravi K. Sheth**.
2020
Monthly Notices of the Royal Astronomical Society, 494, 5148–5160
179. Linear Point and Sound Horizon as purely geometric standard rulers: Parameter dependences and constraints from Cosmic Microwave Background measurements
M. O’Dwyer, S. Anselmi, G. D. Starkman, P.-S. Corasaniti, **Ravi K. Sheth** & I. Zehavi.
2019
Physical Review D, 101, 083517 (13 pages)
178. Nonlinear statistics of primordial black holes from gaussian curvature perturbations
C. Germani & **Ravi K. Sheth**. 2020
Physical Review D, 101, 063520 (15 pages)

177. Density and velocity profiles of cosmic voids
E. Massara & **Ravi K. Sheth**. 2019
Monthly Notices of the Royal Astronomical Society, submitted (arXiv:1811.03132)
176. A universal threshold for primordial black hole formation
A. Escrivà, C. Germani & **Ravi K. Sheth**. 2020
Physical Review D, 101, 044022 (5 pages)
175. Constraining black hole-host galaxy scaling relations and radiative efficiency from galaxy clustering
F. Shankar, V. Allevato, M. Bernardi, et al. 2020
Nature Astronomy, 4, 282–291
174. Excursion set peaks: the role of shear
E. Castorina, A. Paranjape, O. Hahn & **Ravi K. Sheth**. 2019
Journal of Cosmology and Astroparticle Physics, revised (arXiv:1611.03619)
173. Galaxy properties as revealed by MaNGA. II. Formation and assembly of slow and fast rotator ellipticals and dependence on environment
M. Bernardi, H. Domínguez Sánchez, J. R. Brownstein, N. Drory & **Ravi K. Sheth**. 2019
Monthly Notices of the Royal Astronomical Society, 489, 5633–5652
172. Galaxy properties as revealed by MaNGA. I. Constraints on IMF and M_*/L gradients in ellipticals
H. Domínguez Sánchez, M. Bernardi, J. R. Brownstein, N. Drory & **Ravi K. Sheth**. 2019
Monthly Notices of the Royal Astronomical Society, 489, 5612–5632
171. Constraints on the redshift evolution of astrophysical feedback with Sunyaev-Zel’dovich effect cross-correlations
S. Pandey, E. J. Baxter, Z. Xu, et al. 2019
Physical Review D, 100, 063519 (21 pages)
170. Cosmic web anisotropy is the primary indicator of halo assembly bias
S. Ramakrishnan, A. Paranjape, O. Hahn & **Ravi K. Sheth**. 2019
Monthly Notices of the Royal Astronomical Society, 489, 2977–2996
169. Exact enumeration approach to first-passage time distribution of non-Markovian random walks
S. Baghran, F. Nikakhtar, M. R. R. Tabar, S. Rahvar, **Ravi K. Sheth**, K. Lehnertz & M. Sahimi. 2019
Physical Review E, 99, 062101 (10 pages)
168. Cosmic distance inference from purely geometric BAO methods: Linear Point standard ruler and correlation function model-fitting
S. Anselmi, P.-S. Corasaniti, A. Sanchez, G. Starkman, **Ravi K. Sheth** & I. Zehavi. 2019
Physical Review D, 99, 123515 (12 pages)
167. Black hole scaling relations of active and quiescent galaxies: Addressing selection effects and constraining virial factors

- F. Shankar, M. Bernardi, K. Richardson, C. Marsden, **Ravi K. Sheth**, et al. 2019
Monthly Notices of the Royal Astronomical Society, 485, 1278–1292
166. Radial acceleration relation between baryons and dark or phantom matter in the super-critical acceleration regime of nearly spherical galaxies
K.-H. Chae, M. Bernardi, **Ravi K. Sheth** & I.-T. Gong. 2019
The Astrophysical Journal, 877, 18 (22 pages)
165. Modeling nearly spherical pure-bulge galaxies with a stellar mass-to-light ratio gradient under the Λ CDM and MOND Paradigms: II. The orbital anisotropy of slow rotators within the effective radius
K.-H. Chae, M. Bernardi & **Ravi K. Sheth**. 2019
The Astrophysical Journal, 874, 41 (19 pages)
164. The Linear Point standard ruler for galaxy survey data: validation with mock catalogues
S. Anselmi, G. Starkman, P.-S. Corasaniti, **Ravi K. Sheth** & I. Zehavi. 2018
Physical Review D, 98, 023527 (9 pages)
163. Galaxy correlation functions provide a more robust cosmological standard ruler
S. Anselmi, G. Starkman, P.-S. Corasaniti, **Ravi K. Sheth** & I. Zehavi. 2018
Physical Review Letters, 121, 021301 (5 pages)
162. The excursion set approach: Stratonovich approximation and Cholesky decomposition
F. Nikakhtar, M. Ayromlou, S. Baghran, S. Rahvar, M. R. Rahimi-Tabar & **Ravi K. Sheth**. 2018
Monthly Notices of the Royal Astronomical Society, 478, 5296–5300
161. Modeling nearly spherical pure-bulge galaxies with stellar M/L ratio gradients under the Λ CDM and MOND Paradigms: I. Methodology, dynamical stellar masses and the Fundamental Mass Plane
K.-H. Chae, M. Bernardi & **Ravi K. Sheth**. 2018
The Astrophysical Journal, 860, 81 (17 pages)
160. M_*/L gradients driven by IMF variation: Large impact on dynamical stellar mass estimates
M. Bernardi, **Ravi K. Sheth**, et al. 2018
Monthly Notices of the Royal Astronomical Society, 477, 2560–2571
159. The dependence of galaxy clustering on tidal environment in the Sloan Digital Sky Survey
A. Paranjape, O. Hahn & **Ravi K. Sheth**. 2018
Monthly Notices of the Royal Astronomical Society, 476, 5442–5452
158. Halo assembly bias and the tidal anisotropy of the local halo environment
A. Paranjape, O. Hahn & **Ravi K. Sheth**. 2018
Monthly Notices of the Royal Astronomical Society, 476, 3631–3647
157. Bimodal formation time distribution for infall dark matter halos
J. Shi, H. Wang, H. J. Mo., L. Xie, X. Wang, A. Lapi & **Ravi K. Sheth**. 2018
The Astrophysical Journal, 857, 127 (11 pages)

156. Stellar mass functions and implications for a variable IMF
M. Bernardi, **Ravi K. Sheth**, et al. 2018
Monthly Notices of the Royal Astronomical Society, 475, 757–771
155. Dependence of halo bias on mass and environment
J. Shi & **Ravi K. Sheth**. 2018
Monthly Notices of the Royal Astronomical Society, 473, 2486–2492
154. Effective window function for Lagrangian halos
K. Chuen-Chan, **Ravi K. Sheth** & R. Scoccimarro. 2017
Physical Review D, 96, 103543 (15 pages)
153. Selection bias in dynamically-measured super-massive black hole samples: Scaling relations and correlations between residuals in semi-analytic galaxy formation models
E. Barausse, F. Shankar, M. Bernardi, Y. Dubois & **Ravi K. Sheth**. 2017
Monthly Notices of the Royal Astronomical Society, 468, 4782–4791
152. Constraints on halo formation from cross-correlations with correlated variables
E. Castorina, A. Paranjape & **Ravi K. Sheth**. 2017
Monthly Notices of the Royal Astronomical Society, 468, 3813–3827
151. Comparing PyMorph and SDSS photometry. II. The differences are more than semantics and are not dominated by intracluster light
M. Bernardi, J.-L. Fischer, **Ravi K. Sheth**, A. Meert, M. Huertas-Company, F. Shankar, & V. Vikram. 2017
Monthly Notices of the Royal Astronomical Society, 468, 2569–2581
150. Consistency relations for Lagrangian halo bias and their implications
K. Chuen-Chan, **Ravi K. Sheth** & R. Scoccimarro. 2017
Monthly Notices of the Royal Astronomical Society, 468, 2232–2248
149. The high mass end of the stellar mass function: Dependence on stellar population models and agreement between fits to the light profile
M. Bernardi, A. Meert, **Ravi K. Sheth** et al. 2017
Monthly Notices of the Royal Astronomical Society, 467, 2217–2233
148. The halo boundary of galaxy clusters in the SDSS
E. Baxter, C. Chang, B. Jain, S. Adhikari, N. Dalal, A. Kravtsov, S. More, E. Rozo, E. Rykoff & **Ravi K. Sheth**. 2017
The Astrophysical Journal, 841, 18 (17 pages)
147. An order statistics approach to the Halo Model for galaxies
N. Paul, A. Paranjape & **Ravi K. Sheth**. 2017
Monthly Notices of the Royal Astronomical Society, 466, 4515–4529
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