

Institute for Astronomy
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Mark C. Neyrinck
Curriculum Vitæ

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Principal Achievements

- Rigorously tested connections between biological, geological, and large-scale astronomical structures, i.e. between the structure and formation of **the cosmic web and structures such as trees, river networks, trees, mycelia, and transportation, circulatory and respiratory systems**
- **Discovery of rotating intergalactic filaments through my origami and ‘cosmic spiderweb’ (structural-engineering) descriptions of the cosmic web**, as featured in a **NOVA** program
- Pioneered **techniques to detect and analyze cosmic voids** for cosmological constraints, through the standard void-finder ZOBOV; using this, we made the **first detection of the cold imprints of voids** on the **cosmic microwave background**, a **sign of dark energy**.

Education

Ph.D. Astrophysics, University of Colorado at Boulder (Thomas Award) *Dec 2005*
Ph.D. Thesis: “Illuminating the Tips of Dark-Matter Icebergs”
Advisors: Andrew J. S. Hamilton, Nickolay Y. Gnedin

M.S. Astrophysics, University of Colorado at Boulder (High Pass)

B.A. Physics, w/spec. in Astr, University of Chicago (Honors; Lewis Prize) *Jun 2000*
Mathematics, Part IB, Pembroke College, Cambridge University *1998-9*

Terra.do Learning for Action, Software for Climate
certificates for climate science and mitigation *2023, 2024*

Media Highlights

[TEDxBoulder](#) talk: “How to feel the cosmic web on Earth,” Sep 2025
“[How to See the Cosmic Web Here on Earth](#),” *Aeon Magazine*, July 2025
“[Bringing the Cosmic Web Down to Earth with Mark Neyrinck](#),” *Big Impact Astronomy Podcast*, Feb 2025

Interview, segment about origami and cosmology in **NOVA** episode “The Origami Revolution,” <https://rmpbs.pbslearningmedia.org/resource/buac17-912-sci-ess-nvtorcosmicfold/wgbh-nova-the-origami-revolution-cosmic-folding/>

“[Milky Way Bigger Than It Should Be](#),” *Newsweek*, 24 Jan 2023
[Several other articles on the same topic]

“[Cosmic filaments may be the biggest spinning objects in space](#),” *Science News*, 22 June 2021
[Several other articles on the same topic]

“[Art of the Cosmos: Understanding galaxies through origami](#),” *Artful Science* interview, Jun 2021
Interview, *SciArt Magazine*, August 2020

“[The Cosmic Web that Connects Galaxies Together May Be Spinning](#),” *New Scientist*, 16 June 2020
Paper-folding, dark matter and the structure of the universe, *Science Gallery Dublin* podcast, Apr 2020

“[The Cosmic Spiderweb on Dark-Matter-Haloes’ Eve](#)” invited blog post, *The Huffington Post*

“[The Origami Cosmic Web](#)” article, *The Paper* (OrigamiUSA magazine, circ. 1800), Autumn 2016

Quoted in “[Vast cosmic voids merge like soap bubbles](#)”, Cowen, Ron, *Nature*, Oct 15, 2015

“[How to Make an Origami Universe](#),” Battersby, Stephen, *New Scientist*, 20 Dec 2014

Quoted in “[Shadow of a Supervoid](#),” Maria Temming, *New Scientist*, 24 June 2014

“[The Origami Cosmic Web of Galaxies](#),” invited blog post, *The Huffington Post*

“[Dark energy ‘imaged’ in best detail yet](#),” Merali, Zeeya, *New Scientist*

“[Dark Energy’s Early Fingerprints](#),” Carlisle, C. M., *Sky & Telescope* online

Employment

Cosmology Researcher , Institute for Astronomy, University of Hawaii	<i>Jan 2026-Present</i>
Research Investigator , Blue Marble Space Institute of Science	<i>Feb 2026-Present</i>
Affiliate Research Scientist , Blue Marble Space Institute of Science	<i>Feb 2024-Feb 2026</i>
Adjunct Professor , Physics & Astronomy Dept, University of Denver	<i>Spring 2024</i>
Head of Space Physics , Lexset, Inc	<i>2023-2024</i>
AI Modeling for space simulations , Titan Space Technologies	<i>Jan-Apr 2023</i>
Ikerbasque Fellow , U. Basque Country, Spain	<i>Apr 2018-Apr 2023</i>
Postdoctoral Researcher , Durham University	<i>Summer 2016-Winter 2017</i>
Visiting Scientist , Institut d'Astrophysique de Paris	<i>Jan-July 2016</i>
Asst, Assoc. Research Scientist , Johns Hopkins	<i>Summer 2011-Summer 2016</i>
Course Instructor , "Origami Mathematics and Cosmology", JHU	<i>Intersession, Jan 2015</i>
W. M. Keck Fellow , Johns Hopkins University	<i>Fall 2008-Summer 2011</i>
Postdoctoral Researcher , Institute for Astronomy, U. of Hawaii	<i>Fall 2005-Summer 2008</i>
Course Instructor , "Black Holes", APS Dept., U. of Colorado	<i>Summer 2005</i>
Research Assistantship , JILA, Univ. of Colorado	<i>Summer 2000-Fall 2004</i>
Teaching Assistantship , APS Dept., U. of Colorado	<i>Fall 2000, Fall 2002, Spring 2005</i>
Teaching Assistantship , Math Dept., U. of Chicago	<i>1997-1998, 1999-2000</i>

Selected Awards and Grants

- Co-I, 2021 Spanish grant** "Evolution of the Cosmos," with PI Mariam Bouhmadi, Co-I Thomas Broadhurst
- PI, Templeton New Frontiers in Astronomy and Cosmology Award/Grant, 2013**
Only non-faculty recipient; "Information Flowing and Folding into Complexity"
- Collaborator, NASA Grants**, "Reconstructing Information in Large-Scale Structure via Logarithmic Mapping," "Detecting Dark Energy from WMAP and Pan-STARRS1 Cross-correlations"
- Recipient**, JHU Digital Media Center Creative Use of Technology Grant, funding a "folding lab" in my "Origami Mathematics and Cosmology" class
- Richard N. Thomas Award, annual award for the most outstanding research by a graduating**
University of Colorado Astrophysics PhD student
- Supercomputer Allocations**, NERSC, NCSA, XSEDE
- Lewis Prize**, for the "best graduating senior in physics," University of Chicago

Selected Presentations, Workshops, and Invitations

Astronomy, Design and Society Retreat, Abu Dhabi	<i>Oct 2025</i>
Discussion of metaphor in science, Santa Fe Institute	<i>Aug 2025</i>
Lectures, "Art in Forest Ecosystems" class, with Prof Erika Osborne Colorado State University Mountain Campus	<i>Jun 2023, 2024, 2025</i>
Worlds Revealed Public Lecture, Lowell Observatory, Flagstaff, AZ	<i>Jun 2025</i>
Bioneers conference, Berkeley	<i>Mar 2025</i>
Seminar, Institute for Astronomy, U Hawaii at Mānoa	<i>Feb 2025</i>
Talk, "Cosmic Flows 2025: Probing the Universe with Peculiar Velocities," Brisbane, Australia	<i>Feb 2025</i>
Invited talk, "Mind the Gap: Galaxies and the Large-Scale Structure", Córdoba, Argentina	<i>Dec 2024</i>
Water in the West Symposium, CSU Spur, Denver, Colorado, USA	<i>Nov 2024</i>
Talk, "Arts and Sciences: The Nature of Information" conference, Telluride, CO	<i>Jul 2024</i>

SciArt Into the Realms of Possibility, a LASER Panel, *Jun 2024*
 Bradbury Science Museum, Los Alamos
 Talk, “Simplifying Nature Through Origami and AI” Denver Data-Science Meetup *May 2024*
 JHU/Simons Turbulence Group seminar *Mar 2024*
 Seminar “The Boundary of Chaos in the Cosmos”, Institute for Astronomy, Edinburgh *Apr 2023*
 Co-organizer, workshop “Varieties of Indeterminism”, Les Diablerets, Switzerland:
 [“Where the cosmos is chaotic or indeterministic”](#) *Apr 2023*
 5-week participation in “The Cosmic Web: Connecting Galaxies to Cosmology”, KITP,
 Santa Barbara, [Swirls, Information and Eddies, Cosmic and Chaotic](#) *Feb-Mar 2023*
 Presentation: [“Boundaries of Chaos and Stochasticity in the Cosmos”](#)
 the 4th Information Universe Conference, Groningen, NL *June 2022*
 Large-Scale-Structure Cosmology Beyond 2-Point Statistics workshop
 Aspen Center for Physics *June 2022*
 Talk to University of Groningen Cosmology/Cosmic Web group *Jan 2022*
 Colloquium, UNAM Observatorio Astronómico Nacional, Ensenada, Mexico *Dec 2021*
<https://youtu.be/SZeWIPqm9iM>
 Presentation, 60 Minutes in Space, Denver Museum of Nature and Science *Nov 2021*
<https://youtu.be/UKkR36HjCCY?t=2292>
 In-person Colloquium, University of Denver Department of Physics and Astronomy *Oct 2021*
 XIV International Ontology Congress: Natural Determinism and Free Will,
 “Cosmos, Chaos and Stochasticity in the Cosmos”, San Sebastián, Spain *Sep 2021*
 Science Foo Camp (virtual) presentation, organized by Google/O’Reilly Media/Nature
[“The Biggest Rotating Things in the Cosmos”](#) *July 2021*
 Aspen Center for Physics Summer Workshops (in-person) *Jun 2021*
 Google/O’Reilly Media/Nature Science Foo Camp (virtual) *May 2021*
 A rainbow of dark sectors (virtual) Aspen Winter Conference *Apr 2021*
 Latin American Workshop on Observational Cosmology (virtual) Brazil *Dec 2020*
 Visualizing, Tactilizing, and Embodying the Cosmic Web, Cosmic Flows, South Africa *Feb 2020*
 The Cosmic Web in the Local Universe, Leiden Cosmic Web Workshop *Jan 2020*
 Panel, As Above As Below Cosmology/Neuroscience/Art Exhibition *Oct 2019*
 Non-Standard Probes of Cosmology, Aspen Center for Physics *Aug-Sep 2019*
 The Cosmic Web: from Galaxies to Cosmology, Edinburgh *June 2019*
 Colloquium, University of Lyon, France *May 2019*
 Talk, University of Barcelona *Apr 2019*
 Talk, Ibericos (Iberian Cosmology Conference), Bilbao *Apr 2019*
 Invitation, talks at “Méthodes Analytiques, Statistiques et Numériques” trimester
 Institut Henri Poincaré, Paris *Sep-Dec 2018*
 Invitation, 7th Origami Science Mathematics and Education conference, Oxford *Sep 2018*
 Origami galaxy folding workshop, Dragon Boat Festival, Denver, CO *Jul 2018*
 Invitation, “The Information Universe 2” conference, Groningen *Jul 2018*
 Invitation, “Science Foo Camp”, Google/Nature magazine/O’Reilly Media
 science and science communication conference/“camp” at Google X *June 2018*
 “Bringing Physics into the Human Experience,” IOP Symposium, Sunderland, UK *Apr 2018*
 Exploiting Extra-galactic Synergies between WFIRST and Future Facilities workshop *Mar 2018*
 SPHEREx Second Community Workshop *Feb 2018*
 Talk at [Santa Fe Institute](#) *Jan 2018*
 Talk at NYU CCCP *Nov 2017*
 Inst of Physics Symposium, London, “Bringing Physics into the Human Experience” *Oct 2017*
 Seminar: Vorticity in Large-Scale Structure,

Aspen Center for Physics meeting, “Vorticity in the Universe”	<i>Sep 2017</i>
Seminar: Origami-Folding the Local Universe , Paper Studio, Northumbria University	<i>Apr 2017</i>
Talk, Virgo Consortium Meeting	<i>Dec 2016</i>
Seminar, Institute of Theoretical Astrophysics, University of Oslo	<i>Nov 2016</i>
Invited speaker, BAO & RSD: Dark Light on Obscure Acronyms, Sexten Center for Astrophysics, Sesto, Italy	<i>July 2016</i>
Talk at Statistical Challenges in 21st Century Cosmology, Chania, Greece	<i>May 2016</i>
Invited speaker, Statistics of Extrema in Large Scale Structure, Leiden	<i>March 2016</i>
Talk, “Local Group Astrostatistics” workshop, Ann Arbor, MI	<i>June 2015</i>
Invited speaker, “Advanced Workshop on Cosmological Structures from Reionization to Galaxies: Combining Efforts from Analytical and Numerical Methods,” Trieste, Italy	<i>May 2015</i>
Invited speaker, National Society of Black Physicists conference, Baltimore, MD	<i>Feb 2015</i>
Sloan 3 BOSS meeting	<i>Dec 2014</i>
Invited CITA Seminar	<i>November 2014</i>
“The Galaxy-Halo Connection Across Cosmic Time” workshop, Aspen Center for Physics	<i>September 2014</i>
Plenary talk, co-organizer of “Cosmic Voids in the Next Generation of Galaxy Surveys” workshop, Ohio State University	<i>August 2014</i>
Talk at 6OSME: The 6th International Meeting on Origami in Science, Mathematics, and Education, Tokyo	<i>August 2014</i>
Seminar, University of Nagoya, Japan	<i>August 2014</i>
Seminar, Institute for Astronomy, Hawaii	<i>August 2014</i>
Invited talk, Collisionless Fluids Workshop, IAP, Paris	<i>July 2014</i>
Invited talk, IAU Symposium 308: The Zel’dovich Universe, Tallin, Estonia	<i>June 2014</i>
LSST Dark Energy Science Collaboration meeting, Philadelphia	<i>June 2014</i>
Invited talk, IAU Symposium 306: Statistical Challenges in 21st Century Cosmology, Lisbon, Portugal	<i>May 2014</i>
Invited talk, “Tracing the Cosmic Web,” Lorentz Center, Leiden, the Netherlands	<i>Feb 2014</i>
SDSS BOSS collaboration meeting, Berkeley	<i>Dec 2013</i>
CASA/JILA Astrophysics Lunch Seminar, U of Colorado, Boulder	<i>Aug 2013</i>
Talk, Ripples in the Cosmos, Durham, UK	<i>Jul 2013</i>
<i>Outreach, Science/ Art Activities (hyperlinks in blue)</i>	
Talk about systems related to the cosmic web, Kosmos Stargazing Resort, Mosca, CO	<i>Aug 2025</i>
Art installation in “Into the Realms of Possibility,” science-art show at Fuller Lodge Art Center, Los Alamos	<i>Jun-Jul 2024</i>
Cosmological Origami at “Adult Night Out: Connecting with the Cosmos” at Wings Over the Rockies Air & Space Museum, Denver	<i>Jan 2024</i>
Fabric-Folding Cosmic Web Workshop, Dragon Boat Festival, Denver	<i>July 2022, 2023</i>
Consultation for Herbert Bayer Center at the Aspen Institute about astronomical cartography	<i>2022</i>
60 Minutes in Space, Denver Museum of Nature and Science	<i>Nov 2021</i>
Virtual Workshop: The Cosmic Origami Spiderweb	
Latin American Educational Mathematics Club, Paraguay	<i>Aug 2021</i>
Fermilab pARTicles virtual art/science exhibit	<i>Feb 2021</i>
Origami Cosmic Web Virtual Workshop	
Latin American Educational Mathematics Club, Paraguay	<i>Jan 2021</i>
Joint Mathematics Meeting Virtual Mathematical Art Exhibition	
http://gallery.bridgesmathart.org/exhibitions/2021-joint-mathematics-meetings/mark-neyrinck	<i>Jan 2021</i>

Origami and Fabric Cosmic Web Workshops, Science Gallery Dublin *Spring 2020*
 Immersive VR experience and Cosmic Web Workshops about neuron/cosmic web growth
 for “As Above As Below,” <https://www.sciartmagazine.com/collaboration-as-above-as-below.html>, a
 neuroscience/cosmology/art exhibition in San Francisco *Oct-Dec 2019*
 Public JAKIN-MINA (Basque Academy of Sciences) lecture for students about the patterns in
 nature, in the cosmos, and in art, with an experiential origami activity, Bilbao, Spain *Nov 2019*
 Fabric-Folding Cosmic Web Workshop, Dragon Boat Festival, Denver *July 2019*
 Origami and Fabric Cosmic Web Workshops, DARK MATTER exhibition,
 Science Gallery London *June 2019*
 Involvement in “Cosmic Collisions: a summer solstice exploration of creation”, art-science event,
 Crawick Multiverse, Sanquhar, Scotland *Jul 2017*
 Art seminar: [Origami-Folding the Local Universe](#), Paper Studio, Northumbria Univ *Apr 2017*
 Involvement in NOVA program “The Origami Revolution” *2017*
 Involvement in “Celebrate Science,” Durham University *2016-2017*
 JHU Physics & Astronomy Dept Physics Fair contributions and volunteering *2010-2015*
 “The Bridge” Resident, SciArt Center *2016-2017*
 Involvement in “The Origami Code” documentary: interview and making animations *2015*
 JHU Physics & Astronomy Dept Physics Fair contributions and volunteering *2009-2014*
 Development of “Fold Your Own Galaxy” origami activity, and
 “Fold Your Own Universe” NASA SpaceApp
 USA Science & Engineering Festival (Wash, DC) contributions and volunteering *Oct 2010*
 UH Institute for Astronomy Open Houses *2006-2008*
 Supervising the “Astronomy” and “Reach for the Stars” events for
 Colorado Science Olympiad (middle and high school) competitions *2001-2005*
 Running open houses at Boulder’s Sommers-Bausch Observatory

Professional and Departmental Service

Scientific Advisory Board, Titan Space Technologies Corporation *2021-2023*
 LSST-Dark Energy Science Collaboration full member *2014-Present*
 JHU Cosmology Journal Club (Cosmojo) founding and weekly organization *2009-2015*
 SOC, “Cosmic Voids in the Next Generation of Galaxy Surveys”
 workshop, Ohio State University *Aug 2014*
 NASA Astrophysics Theory and Data Analysis Program panels (ATP, ADAP) *2011, 2012, 2014*
 Head Organizer for IDIES (Institute for Data-Intensive Engineering and Science) *Aug 2009*
 Inaugural Symposium/Alex Szalay’s 60th Birthday “Szalaybration”
 Colloquium Committee, UH Institute for Astronomy *2007-2008*

Publications: h-index 37, > 6872 total citations (according to [Google Scholar](#))

(blue text is linked to abstracts)

1. Pandey & Neyrinck, 2026, in preparation;
 “Intergalactic rainstorms: how the cosmic web responds to a flood”
2. Kumagai, Vogeley... & **Neyrinck**, 2026, *Astrophysical Journal*, 998, 85
[DeepVoid: A Deep Learning Void Detector](#)
3. Neyrinck, Aragón-Calvo & Szapudi, 2026, submitted
[Galaxy and Halo Root Systems: Fingerprints of Mass Assembly](#)
4. Cai & **Neyrinck**, 2026, *Encyclopedia of Astrophysics*, ed. Howlett et al., Springer
[Cosmology with Cosmic Voids](#)
5. Mirasola, ... **Neyrinck** et al., 2026, *Physical Review D*, submitted
[The three phases of self-gravitating scalar field ground states](#)

6. Xu, ... **Neyrinck** et al., 2025, *Astrophysical Journal*, 982, 5
[Baryon Acoustic Oscillations Analyses with Density-Split Statistics](#)
7. Chen, ... **Neyrinck** et al., 2024, *MNRAS*, 532, 3947
[Estimation of line-of-sight velocities of individual galaxies using neural networks: I. Modelling red-shift-space distortions at large scales](#)
8. Aragon-Calvo, Silk & **Neyrinck**, 2023, *MNRAS Letters*, 520, 28
[The unusual Milky Way-local sheet system: implications for spin strength and alignment](#)
9. Zheng, ... **Neyrinck** et al., 2023, *MNRAS*, 519, 1171
[Measuring cosmic filament spin with the kinetic Sunyaev-Zel'dovich effect](#)
10. Glennon, ... **Neyrinck** & Prescod-Weinstein, 2023, *JCAP*, 7, 4
[Scalar dark matter vortex stabilization with black holes](#)
11. **Neyrinck**, Genel & Stücker, 2022, (arXiv:2206.10666)
[Boundaries of chaos and determinism in the cosmos](#)
12. Xia, **Neyrinck**, Cai & Aragon-Calvo, 2021, *MNRAS*, 506, 1059
[Intergalactic Filaments Spin](#)
13. Falck, ..., **Neyrinck**, et al., 2021, *MNRAS*, 506, 2659
[Indra: a Public Computationally-Accessible Suite of Cosmological N-body Simulations](#)
14. Tosone, **Neyrinck**, et al., 2021, *MNRAS*, 505, 2999, [MUSCLE-UPS: Improved Approximations of the Matter Field with the Extended Press-Schechter Formalism and Lagrangian Perturbation Theory](#)
15. Pozo, ... **Neyrinck** et al., 2021, *MNRAS*, 504, 2868
[Wave dark matter and ultra-diffuse galaxies](#)
16. Mao, ... **Neyrinck** et al., 2021, *MNRAS*, 501, 1499
[Baryon acoustic oscillations reconstruction using convolutional neural networks](#)
17. Tosone, **Neyrinck**, et al., 2020, *MNRAS*, 498, 2663
[Beyond the Lognormal Approximation: a General Simulation Scheme](#)
18. **Neyrinck** et al. (24 authors), *SciArt Magazine*, Feb 2020, [Exploring Connections Between Cosmos & Mind Through Six Interactive Art Installations in "As Above As Below"](#)
19. Steinhardt, Jauzac, ... **Neyrinck**, et al., 2020, *ApJS*, 247, 64
[The BUFFALO HST Survey](#)
20. **Neyrinck** et al., 2020, *Open Journal of Astronomy*, vol. 3, id. 3
[Halo Spin from Primordial Inner Motions](#)
21. Aragon-Calvo, M., **Neyrinck**, Mark C., Silk, J., 2019, *Open Journal of Astronomy*, vol. 2, id. 7
[Galaxy Quenching from Cosmic Web Detachment](#)
22. **Neyrinck** et al., 2018, *MNRAS*, 478, 2495
[Density-dependent clustering: I. Pulling back the curtains on motions of the BAO peak](#)
23. **Neyrinck**, 2018, *proc of the 7th meeting of Origami, Science, Mathematics and Education*
[The Cosmic Spiderweb and General Origami Tessellation Design](#)
24. **Neyrinck**, in 2018, Triscott & Crisp, ed., *The Live Creature and Etherial Things: Physics in Culture*
25. **Neyrinck** et al., 2018, *Roy Soc Open Science*, Volume 5, Issue 4, id.171582
[The cosmic spiderweb: equivalence of cosmic, architectural and origami tessellations](#)
26. Raccanelli, ... **Neyrinck** et al., 2018, *Physics of the Dark Universe*, Volume 19, p. 109-123.
[Doppler term in the galaxy two-point correlation function: wide-angle, velocity, Doppler lensing and cosmic acceleration effects](#)
27. Libeskind, ... **Neyrinck**, et al., 2018, *MNRAS*, 473, 1195
[Tracing the cosmic web](#)
28. Ivkin, ... **Neyrinck**, Szalay et al., 2018, *Astronomy & Computing*, Volume 23, p. 166-179.
[Scalable Streaming Tools for Analyzing N-body Simulations: Finding Halos and Investigating Excursion Sets in One Pass](#)
29. Falck, ..., **Neyrinck**, et al., 2017, *ApJ*, 837, 181
[The Effect of Corner Modes in the Initial Conditions of Cosmological Simulations](#)

30. Cai, **Neyrinck**, Mao, Peacock, Szapudi & Berlind, 2016, MNRAS, 466, 3364
[The lensing and temperature imprints of voids on the Cosmic Microwave Background](#)
31. Mao, Berlind, Scherrer, **Neyrinck**, et al., 2017, ApJ, 835, 160
[Cosmic Voids in the SDSS DR12 BOSS Galaxy Sample: The Alcock-Paczynski Test](#)
32. Mao, Berlind, Scherrer, **Neyrinck**, et al., 2017, ApJ, 835, 161
[A Cosmic Void Catalog of SDSS DR12 BOSS Galaxies](#)
33. Kitaura, F-S, ... **Neyrinck**, Mark, et al., 2016, MNRAS, 456, 4156
[The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: mock galaxy catalogues for the BOSS Final Data Release](#)
34. McCullagh, N., **Neyrinck**, Mark, Norberg, P., Cole, S., 2016, MNRAS, 457, 3652
[Recovering dark-matter clustering from galaxies with Gaussianization](#)
35. **Neyrinck**, Mark C. 2016, MNRAS, 460, 816
[Tetrahedral collapse: a rotational toy model of simultaneous dark-matter halo, filament and wall formation](#)
36. Zaoxing, L., ... **Neyrinck**, Mark, et al. (4th of 10) 2015 IEEE 11th International Conference on e-Science, pp.342-351, Aug. 31 2015-Sept. 4 2015, doi: 10.1109/eScience.2015.73
[Streaming Algorithms for Halo Finders](#)
37. **Neyrinck**, Mark C. 2016, MNRAS Letters, 455, 11
[Truthing the stretch: Non-perturbative cosmological realizations with multiscale spherical collapse](#)
38. Alam, Shadab, ... **Neyrinck**, Mark C., et al. 2015, ApJS, 219, 12
[The Eleventh and Twelfth Data Releases of the Sloan Digital Sky Survey: Final Data from SDSS-III](#)
39. Achitouv, Ixandra, **Neyrinck**, Mark; Paranjape, Aseem, 2015, MNRAS, 451, 3964
[Testing spherical evolution for modelling void abundances](#)
40. Aragon-Calvo, M., **Neyrinck**, Mark C., Silk, J., 2014, MNRAS, submitted
[Star Formation Isochrone Surfaces: Clues on Star Formation Quenching in Dense Environments](#)
41. Yang, F. Y., **Neyrinck**, Mark C., ... Silk, J., 2014; MNRAS, 451, 360
[Warmth Elevating the Depths: Shallower Voids with Warm Dark Matter](#)
42. **Neyrinck**, Mark C., 2015; MNRAS Letters, 452, 26
[Kolmogorov complexity in the Milky Way and its reduction with warm dark matter](#)
43. **Neyrinck**, Mark C., 2015; accepted after refereeing to Origami⁶: Proceedings of the 6th International Meeting on Origami in Science, Mathematics, and Education.
[Cosmological Origami: Properties of Cosmic-Web Components when a Non-Stretchy Dark-Matter Sheet Folds](#)
44. Hoffmann, K.; ... **Neyrinck**, Mark C., et al. (17 authors), 2014, MNRAS, 442, 1197
[Subhaloes gone Notts: subhaloes as tracers of the dark matter halo shape](#)
45. **Neyrinck**, Mark C.; Aragon-Calvo, M. A.; Jeong, D.; Wang, X., 2014, MNRAS, 441, 646
[A halo bias function measured deeply into voids without stochasticity](#)
46. Cai, Y-C; **Neyrinck**, Mark C.; et al. (5 authors), 2014, ApJ, 786, 110
[A Possible Cold Imprint of Voids on the Microwave Background Radiation](#)
47. Cai, Y-C; ... **Neyrinck**, Mark C.; et al. (5 authors), 2014, MNRAS, 439, 2978
[The Integrated Sachs-Wolfe effect in f\(R\) gravity](#)
48. Wang, Xin, ... **Neyrinck**, Mark et al. (5 authors), 2014, ApJ, 793, 58
[Kinematic Morphology of Large-Scale Structure: Evolution from Potential to Rotational Flow](#)
49. Pujol, A., ..., **Neyrinck**, Mark C., et al., 2014, MNRAS, 438, 3205
[Subhaloes gone Notts: the clustering properties of subhaloes](#)
50. Knebe, A., ..., **Neyrinck**, Mark C., et al. (21 of 35 authors), 2013, MNRAS, 435, 1618
[Structure finding in cosmological simulations: the state of affairs](#)
51. **Neyrinck**, Mark C. & Yang, L. F., 2013, MNRAS, 433, 1628
[Ringing the initial Universe: the response of overdensity and transformed-density power spectra to initial spikes](#)
52. Onions, J., ..., **Neyrinck**, Mark C., et al. (12th of 18 authors), 2013, MNRAS, 429, 2739.
[Subhaloes gone Notts: spin across subhaloes and finders](#)
53. Hernandez-Montenegro, C., ..., **Neyrinck**, Mark C., et al. (7th of 15 authors), MNRAS, 438, 1724.
[The SDSS-III Baryonic Oscillation Spectroscopic Survey: Constraints on the Integrated Sachs Wolfe effect](#)

54. McCullagh, N., **Neyrinck**, Mark C., et al. (4 authors), ApJ Letters, 763, 14.
[Removing BAO-peak shifts with local density transforms](#)
55. **Neyrinck**, Mark C., 2013, MNRAS, 428, 141
[Quantifying distortions of the Lagrangian dark-matter mesh in cosmology](#)
56. **Neyrinck**, Mark C., 2012, MNRAS, 427, 494.
[Origami constraints on the initial-conditions arrangement of streams and caustics](#)
57. Onions, J., ... **Neyrinck**, Mark C. et al. (17 authors), 2013, MNRAS, 429, 2739
[Subhaloes gone Notts: Spin across subhaloes](#)
58. Falck, B., **Neyrinck**, Mark C., & Szalay, A, 2012, ApJ, 754, 126
[ORIGAMI: Delineating haloes using phase-space folds](#)
59. Onions, J., ... **Neyrinck**, Mark C. et al. (17 authors), 2012, MNRAS, 423, 1200
[SubHaloes Going Notts: The SubHalo-Finder Comparison Project](#)
60. Carron, J., & **Neyrinck**, Mark C., 2012, ApJ, 750, 28
[On the inadequacy of N-point correlation functions to describe nonlinear cosmological fields: Explicit examples and connection to simulations](#)
61. Falck, B., **Neyrinck**, Mark C., Lavaux, G, Aragon-Calvo, M. & Szalay, A, 2012, ApJ, 745, 17.
[Straightening the Density-Displacement Relation with a Logarithmic Transform](#)
62. **Neyrinck**, Mark C., 2011, ApJ, 742, 91
[Rejuvenating the Matter Power Spectrum III: The Cosmology Sensitivity of Gaussianized Power Spectra](#)
63. **Neyrinck**, Mark C., 2011. ApJ, 736, 8.
[Removable Matter-power-spectrum Covariance from Bias Fluctuations](#)
64. Wang, X., **Neyrinck**, Mark C., et al. (8 authors), 2011. ApJ, 735, 32.
[Perturbation Theory of the Cosmological Log-density Field](#)
65. Knebe, A., ... **Neyrinck**, Mark C., et al. (37 authors), 2011. MNRAS, 415, 2293.
[Haloes gone MAD: The Halo-Finder Comparison Project](#)
66. Tian, H.J., **Neyrinck**, Mark C., Budavári, T., & Szalay, A.S., 2011. ApJ, 728, 34.
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Published creative writing

1. “[Lumentation](#)”, 2022, Toasted Cheese Literary Journal
2. “[The Garden](#)”, 2015, Toasted Cheese Literary Journal
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Software-Development Accomplishments

Developed the publicly available cosmological halo-finders [VOBOZ](#) and [ORIGAMI](#), and the void-finder [ZOBOV](#)

Expertise with *N*-body simulations, parallelization and running highly parallel applications

Highly proficient in Python, C, FORTRAN, IDL, Java, Mathematica, and HTML

Experienced in Unity

Non-Astronomical Interests

Music composition, piano, creative writing, mathematics, origami

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