

NOAM I LIBESKIND

Leibniz-Institut für Astrophysik Potsdam (AIP)
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RESEARCH INTERESTS

Making maps of the universe by inferring the distribution of dark matter; the large-scale structure of the universe; galaxy formation, the local group, dwarf galaxies.

ACADEMIC POSITIONS

- **Head of the “Cosmography and large scale structure” group**, *Leibniz Institute for Astrophysics Potsdam (AIP)*, Germany. Tenure, since **Dec 2015**
- **Professeur Contractuel, head of the “Near Field cosmology” group**, *Universite de Lyon; UCB Lyon-1, Institut de Physique Nucléaire de Lyon (IPNL)*, France. **Dec 2018 - Dec 2021**
- **Senior postdoc**, Deutsche Forschungs Gemeinschaft (DFG) “Eigene Stelle”. *AIP*, **Oct 2010 - Dec 2015**
- **Junior postdoc**, Minerva researcher fellow, *AIP*, Potsdam, Germany. **Oct 2008 - Oct 2010**
- **Junior postdoc**, Gold Meir researcher fellow, *The Hebrew University of Jerusalem*, Israel. **Oct 2006-Oct 2008**

EDUCATION

- *PhD in Physics*, **Durham University**, Durham, UK, 2008
- *MAs in Mathematics*, Part III of the Mathematics Tripos, **University of Cambridge**, UK, 2002
- *Bsc in Theoretical Physics*, **University College London**, London, UK, 2001

PUBLICATIONS (AS OF 8.2025)

- 132 published (or in press) peer reviewed articles in academic journals, including *Nature Astronomy*, *Physical Review Letters*, *JCAP*, *ApJ*, *MNRAS*, *A&A* etc
- 2 popular science article commissioned by **Scientific American**: March 2014, July 2016 (reprinted in Winter 2016, September 2017); one article for **Sky & Telescope**: October 2019
- 4 371 citations, *h*-index of 37

CONFERENCES AND RESEARCH VISITS

- Visitor to various institutions including The Aspen Center for Physics, The Hebrew University of Jerusalem, UC Santa Barbara, New Mexico State University, University of California Santa Cruz
- Chair or co-chair of the SOC for 14 conferences (Including Lorenz Center, AIP thinkshops and international meetings in various countries)
- Invited Colloquia and invited conference lectures on an annual basis: contributed to over 70 international conferences.

TEACHING

- Currently actively supervising 1 PhD Student, 3 post-docs
- Track record: Supervision of 2 PhD students (as main supervisor, at AIP), co-supervision of 2 students (at other universities) and 10 postdocs (at AIP). Supervision of 4 masters, 3 Bachelors and many high school interns
- Lectured ten MA/BA course in Cosmology, Large-scale structure, General Relativity and Astronomy at Humboldt University and Potsdam University

GRANTS AND AWARDS

- Raised ~4,300,000€ in research, conference and travel grants from the DFG, EU and other sources.
- Winner of the biennial Potsdam Kongress Prize for the best conference in Potsdam 2013 - 2015
- PI of 89m (Co-I of 125m) CPU-hours in computing proposals

ACADEMIC POSITIONS

Leibniz-Institut für Astrophysik Potsdam (AIP) December 2015 - Present
Tenured faculty, Group Head Potsdam, Germany

Head of Cosmography and Large-scale Structure *September 2019 – Present*

Acting Head of the Cosmology Section *October 2016 - April 2017*

Deputy Head of the Cosmology Section *January 2016 - October 2016 and since April 2017*

Institut de Physique Nucléaire de Lyon (IPNL) December 2018 - December 2021
Professeur Contractuel of the University of Lyon -1 Lyon, France

Head of the IDEX group “Near Field cosmology”: 2 postdocs + 2 students

Joint position

Leibniz-Institut für Astrophysik Potsdam (AIP) October 2010 - December 2015
PI, DFG Research Grant Potsdam, Germany

Eigene Stelle, “The alignment of satellite galaxies in gas-dynamical simulations.”

Parental Leave (Elternzeit) 09.2011 - 02.2012, 01.2014 - 07.2014, 07.2016 - 10.2016

Astrophysical Institute Potsdam (AIP) October 2008 - October 2010
Minerva post-doctoral Fellow Potsdam, Germany

Independently funded post-doc in numerical cosmology

The Hebrew University of Jerusalem October 2006 - October 2008
Golda Meir post-doctoral Fellow Jerusalem, Israel

Independently funded post-doc in numerical cosmology

EDUCATION

Durham University January 2003 - January 2008
PhD in Physics Durham, UK

- Thesis Title: “The Formation of Satellite Galaxies and their Associated Black Holes”
- Supervisors: Prof C S Frenk & Prof S Cole

University of Cambridge September 2001 - July 2002
Masters in Advanced Study of Mathematics (MASt), Part III with Honors Cambridge, UK

- Thesis Title: “The Age of the Universe”
- Supervisor: Prof Ofer Lahav

University College London September 1999 - July 2001
B.Sc in Theoretical Physics, 1st Class Honors London, UK

- Bachelor Thesis project Title: “Topology in the Solar Corona”
- Supervisor: Prof Mitch Berger

GRANTS PI

Heraeus Foundation <i>Thai -German Cosmology School</i> 90 person school in Changmai, ~ 30% co-financed by NARIT, (10/2025)	04/2025	80,000€
Heraeus Foundation <i>Copernicus at 550 Symposium</i> One day symposium in the context of Berlin Science Week, with M Steinmetz	04/2023	65,000€
DFG** <i>Joint Polish-German research project, Beethoven CLASSIC 3</i> 3 years of funding for “Local Universe Tests of Gravity and Dark matter”	10/2019	584,000€
DFG** <i>Joint Sino-German research project</i> 3 years of funding for “The cosmic web and galaxy alignments”	01/2019	462,850€
IDEXLyon Group <i>University of Lyon -1</i> 3 years of funding for “The Near Field as a Cosmological Laboratory” at the Institut de Physique Nuclear de Lyon for 4 people	12/2018	1,124,000€
Ramon y Cajal , <i>Spanish Ministry for Economics and Competitiveness</i> 5 years of funded research Declined	[2015]	[220,000€]
Potsdam Kongress Preis 2015 , <i>Stadt Potsdam</i> Best re-occurring conference in Potsdam between 2013-2015	11/2015	1,000€
DFG <i>International conference grant</i> “Dwarfs and Satellites in the Local Group” (09/2014)	01/2014	16,400€
Lorentz Center , <i>Leiden, Conference grant</i> “Tracing the cosmic web” (02/2014)	05/2013	20,300€
DFG India & DST Two Indian summer internships at the AIP	03/2013	10,000€
Leibniz Society ERC application prize	02/2013	10,000€
Kavli Institute, UC Santa Barbara Visiting Researcher for program on dwarfs	03/2012	2,000€
DFG <i>Eigene Stelle</i> 3 Years funded research	09/2010	176,400€
DAAD , <i>Conference travel (Argentina)</i>	08/2010	3,000€
		[2,774,950€]
Total PI		2,554,950€

GRANTS CO-I

EU Twinning** <i>EXCOSM: Building Excellence in the Study of Galaxies and Cosmology at the University of Tartu</i> Lead: U Tartu (50%) Partners: AIP (25%), Groningen (25%), U Lorraine (10%)	10/2024	1,499,601.47€
Lorentz Center, Leiden, Conference grant “A new dawn of dwarf galaxy research” (04/2024, PI Muller)	04/2023	30,000€
DAAD PPP France (Strasbourg) “Systems of satellite galaxies as cosmological probes” (PI: Pawlowski)	11/2019	8,541€
NOVA (Netherlands research School for Astronomy) “The Cosmic Web in the Local Universe”, additional funds (PI: van de Weygaert)	11/2019	2,000€
National Natural Science Foundation of China “The influence of the cosmic web on satellite and dwarf galaxies” (PI Guo)	12/2017	23,000€
DFG International conference grant “The Role of Feedback in galaxy formation” (09/2018, PI: Pfrommer)	11/2017	20,400€
NWO (The Netherlands Organization for Scientific Research) “Tracing the cosmic web”, additional funds (PI: van de Weygaert)	01/2014	2,250€
NOVA (Netherlands research School for Astronomy) “Tracing the cosmic web”, additional funds (PI: van de Weygaert)	01/2014	3,000€
DAAD collaboration grant Collaboration with A Klypin (NMSU, PI: Gottlöber)	01/2011	10,000€
Total co-I		1,598,792.47€
		[4,373,742.47€]
Total co-I + PI		4,153,742.47€

** Grant volume split between local and partner institution.

TEACHING (LECTURER)

Potsdam University <i>Large-scale structure (Msc)</i>	October 2022 - February 2023
University Claude Bernard Lyon, Univeriste de Lyon-1 <i>Special topics in Cosmology (Msc)</i>	Fall 2020
Potsdam University <i>General Relativity and Cosmology (Msc)</i>	October 2018 - February 2019
Potsdam University <i>Introduction to General Relativity and Cosmology (Msc)</i>	October 2016 - February 2017
Potsdam University <i>Introduction to General Relativity (BA/MA)</i>	April 2016 - July 2016
Humboldt University <i>Introduction to Astronomy & Astrophysics (BA)</i>	October 2014 - February 2015
Humboldt University <i>Introduction to Astronomy & Astrophysics (BA)</i>	October 2013 - February 2014
Potsdam University <i>Introduction to General Relativity and Cosmology (BA/MA)</i>	April 2013 - July 2013
Potsdam University <i>Early Universe Physics (BA/MA)</i>	April 2010 - July 2010
Potsdam University <i>Early Universe Physics (BA/MA)</i>	April 2009 - July 2009

TEACHING (SUPERVISOR: PHD, MASTERS, BACHELORS & INTERNSHIP)

• Yuvraj Muralichandran , Potsdam University, Master's thesis “Galaxy alignments”	June 2023 - current
• Chaimonkol Duangchan , Potsdam University, PhD Thesis “Simulating the Local Universe”	January 2024 - January 2027 (est)
• Shreeya Nadgowda , Potsdam University, Masters Thesis, “Biases in bulk flows”	March 2024
• Aurelien Valade , Potsdam University & Univeristy of Lyon-1; PhD Thesis “Unveiling the Local Universe”	June 2019 - June 2023
• Mohammed El-Sayed , Potsdam University “identifying structures in the V-web”	August - November 2020

- **Johannes Laukens**, Oakham School, 2 week internship on “simulations and coding” August 2019
- **Chris Böttner**, Humboldt University, **B.A.** Thesis July 2018 - Nov 2018
- **Eliot Slinger**, Französisches Gymnasium, 2 week internship on “Cosmic Calendar” June 2018
- **Julius Blind**, Städtisches Gymnasium Düren, 2 week internship on “Cosmic Calendar” March 2018
- **Jannis Schuhruch**, Humboldt Gymnasium, 2 week internship on “Cosmic Calendar” Nov 2017 - Dec 2017
- **Marco Minchev** JFK Schule, 1 month internship on “Analysis of dark matter haloes” July 2017
- **Aurelian Valade** University of Lyon, Three month **Masters** thesis (M2) May 2017-July 2017
- **Sebastian Wullrich** FU Berlin, 6 week **B.A.** thesis ‘Simulations and mechanics’ Feb 2016-May 2016
- **Chris Gong**, Potsdam U, Master’s intern, “Lopsided galaxies in simulations” Dec 2015-Dec 2016
- **Oktay Caliskan**, Albert-Schweitzer-Gymnasium, 2 week internship on “Cosmic Calendar” Oct 2014
- **Ofer Metuki**, Hebrew University of Jerusalem Israel, **PhD** Candidate June 2012 - September 2015
co-supervisor: Yehuda Hoffman “*Dark haloes and the cosmic web*”
- **Isha Pahwa**, University of Delhi, PhD Candidate,co-supervisor: Debajyoti Choudhury Feb 2013 - July 2013
- **Charitarth Vyas**, Sardar Vallabhbhai National Institute of Technology, India February 2013 - July 2013

POSTDOCS (*HIRED AND MENTORED*)

David Chay Benisty, AIP: August 2024 - August 2027, Result so far: 1 paper together
Mooritz Muru, AIP: January 2024 - January 2027. Result so far: 2 papers together
Simon Pfeifer, AIP: November 2020 - November 2024. Result: 6 papers together, Now: *Data scientist*
Jean-Baptiste Salomon, AIP/HU: October 2020 - June 2023. Result : 2 papers together, Now: *Data scientist*
Oliver Newton, IPNL: November 2019 - June 2021. Result: 3 papers together
Now: *Marie Curie Fellow in Surrey*
Alexandra Dupuy, IPNL: January 2019 - June 2021. Result: 3 papers together
Now: *Post-doctoral research fellow, Korean Institute for Advanced Studies*
Peng Wang, AIP: March 2019 - February 2022. Result: 14 papers together
Now: *Tenured faculty, Shanghai Astronomical Observatory, CAS*
Edoardo Carlesi, AIP: January 2017 - January 2019. Result: 8 papers together
Now: *Data Scientist*
Elmo Tempel, AIP: October 2016 - October 2018. Result: 3 papers together + 21 papers independent
Now: *Professor, University of Tartu, Estonia*
Quan Guo, AIP: August 2013 - August 2017. Result: 6 papers together + 2 papers independent
Now: *Tenured faculty, Shanghai Astronomical Observatory, CAS*

TELESCOPE TIME AND COMPUTING GRANTS

- **PI, Computing time**, 14m CPUh at Forschungs Zentrum Jülich (JURECA), *Reionization of the Local Group*, co-I: Iliev, Connaboy May 2025
- **PI, Computing time**, 9m CPUh at Forschungs Zentrum Jülich (JURECA), *The Local Group's Epoch Of Reionization*, co-I: Iliev, Connaboy May 2024
- **PI, Computing time**, 10m CPUh at Forschungs Zentrum Jülich (JURECA), *The HESTIA Epoch Of Reionization*, co-I: Iliev, Connaboy May 2023
- **PI, Computing time**, 12m CPUh at Forschungs Zentrum Jülich (JURECA), *The HESTIA Epoch Of Reionization*, co-I: Iliev, Connaboy May 2022
- **PI, Computing time**, 10m CPUh at Forschungs Zentrum Jülich (JURECA), *The reionization of our Local Universe in the Hestia Suite*, co-I: Iliev May 2021
- **co-I, Telescope time**, 26hours on the VLT, FORS2, P106 *Extending near-field cosmology to the Centaurus and M83 groups of galaxies*, PI: Müller August 2020
- **co-I, Computing time**, 3.5m CPUh at Forschungs Zentrum Jülich (JURECA), *Near Field Cosmology - From the first stars to the present universe*, PI: Iliev November 2019
- **PI, Computing time**, 1.5m CPUh at Forschungs Zentrum Jülich (JURECA), *On the Formation of Globular Clusters From Tidal Streams*, November 2017
- **PI, Computing time**, 30.1m CPUh at Leibniz Rechen Zentrum (LRZ), *HESTIA: the Local Universe on a Moving Mesh*, April 2017
- **PI, Computing time**, 0.6m CPUh at Forschungs Zentrum Jülich (JURECA), *On the Formation of Globular Clusters From Tidal Streams*, October 2016
- **co-I Computing time**, 3.4m CPUh + 0.9m GPUh at Forschungs Zentrum Jülich (JURECA), *Near Field Cosmology - From the first stars to the present universe*, PIs: S Gottlöber and I Iliev October 2016
- **co-I Computing time**, 35m CPUh Leibniz Rechen Zentrum (LRZ) Munich, *Hydro CLUES*, PI: Dolag, 04/2016
- **PI, Telescope time**, Half night (6 hours) DDT on the Large Binocular Telescope, February 2016

Total computing time PI and Co-I: **129.1m CPUh**

AWARDS, SCHOLARSHIPS, AND NAMED FELLOWSHIPS

- Winner of the 2015 Potsdam Kongress Preis, *Stadt Potsdam*, 1,000€, 10/2015
- Ramon y Cajal Fellow, *Ministerio de Economia e competitividad*, 05/2015 (**declined**), SPAIN
- A T Kearny scholar at the Falling Walls Lab, 11/2012, GERMANY
- Lindau Nobel Laureate meeting attendee (fully funded), 06/2012, GERMANY
- Minerva Fellow, *Max Planck Gesellschaft*, 09/2008-09/2010, AIP, GERMANY
- Golda Meir Fellowship, 10/2006-09/2008, *Hebrew University*, ISRAEL
- The House of Commons Young Scientist Fair, 2005
- Joint Industry Fund Grant, 01/2003-10/2004, *Durham University*, UK
- Commonwealth Scholar, 09/2001-06/2002, *University of Cambridge*, UK

COLLOQUIA (SELECTED)

- Kavli Institute for the Physics and Mathematics of the Universe, University of Tokyo, Japan, March 2024
- Seoul National University, South Korea, October 2023
- Center For Advanced Studies, Ludwig Maximilian University, *Key Note Lecture*, June 2023
- Kapteyn Astronomical institute, University of Groningen, March 2023
- Leibniz Institute for Astrophysics, Potsdam, November 2020
- Purple Mountain Observatory, Nanjing, March 2018
- Deutsches Elektronen-Synchrotron (DESY), January 2018
- Lebedev Physical Institute, Moscow, December 2017
- University College London, March 2017
- University of Amsterdam, February 2017
- University College London, May 2016
- University of Geneva, March 2015
- Observatoire d'Strasbourg, February 2015
- Technion, Israel institute of Technology, November 2014
- Tel Aviv University, November 2014
- Hebrew University of Jerusalem, November 2014
- Ruhr-Universität Bochum, July 2014
- Georg-August-Universität Göttingen, May 2014
- Technion, Israel institute of Technology, November 2013
- Hebrew University of Jerusalem, November 2013
- New Mexico State University, December 2012
- Harvard University, Center for Astrophysics, May 2011
- Durham University, April 2010
- Leibniz Institute for Astrophysics, Potsdam, April 2009
- Tel Aviv University, October 2007
- Technion, Israel institute of Technology, September 2007
- Max Plank Institute for Radio astronomy, University of Bonn, January 2006

RESEARCH VISITS (> 2 WEEKS)

- Aspen Institute of Physics, *Dwarf galaxies as cosmological probes*. **Invited visiting Scholar**, July 2014
- The Hebrew University of Jerusalem, November 2013
- New Mexico State University, December 2012
- *KITP*, University of California Santa Barbara **Invited visiting Scholar**, April 2012
- Aspen Institute of Physics, **Invited visiting Scholar**, August 2012 (Declined)
- New Mexico State University, November 2011
- University of California Santa Cruz, August 2006

SERVICE, DUTIES AND PROFESSIONAL MEMBERSHIPS

- Referee for the Deutsche Forschungs Gemeinschaft (DFG, the national science foundation): since 2015
- Marie Skodowska-Curie reviewer: 2022, 2023, 2024, 2025.
- Jury Member, Lindau Nobel Meeting 03/2024
- Jury Member, Physical sciences breakthrough prize, Falling Walls conference, Berlin 06/2023
- Chair of the AIP's work council (2022-2026)
- Member of the AIP's internal Scientific Council (2015-2018)
- External Thesis referee and viva juror for PhD's awarded at the Universidad Autonoma de Madrid (2018), the University of Western Australia (2020), Liverpool John Moores University (2022)
- Member of the Astronomische Gesellschaft (since 01/2016)
- Member of the Square Kilometer Array (SKA) Science Working Group for Cosmology (03/2014-01/2015)
- Active Referee for: MNRAS, MNRAS *Letters*, ApJ, ApJ *Letters*, AJ, Nature, Science
- European Southern Observatory, Time Allocation Committee member, (2019)

MEETINGS ORGANIZED

1. “The Willhelm and Else Heraeus foundation and NARIT Cosmology school: galaxies and beyond” *Chiangmai, Thailand*, October 2026. **Chair of the SOC.**
2. “The role of feedback in galaxy formaion: from small scale winds to large scale outflows” *18th AIP Thinkshop*, AIP, Potsdam, July 2025, **Member of the SOC**, main organizer: Christoph Pfrommer
3. “CLUES-2025” *Potsdam, Germany*, June 2025. **Chair of the SOC.**
4. “A new dawn of dwarf galaxy formation” *Lorentz Center, Leiden*, April 2024
Member of the SOC. Oliver Müller (chair), Noam Libeskind, Katja Fahrion, Teymur Saif, Maria Angela
5. “550 Years of the Copernican Universe: our Place in the Cosmos” *Willhelm and Else Heraeus-Symposium* Berlin, November 2023 **Main Organizer** with Matthias Steinmetz
6. “2nd Roman Juszkiewicz Symposium ” *Polish Academy of Sciences*, September 2022
Member of the SOC. Maciej Bilicki, Enzo Branchini, Bożena Czerny, Ruth Durrer, Enrique Gaztañaga, Wojciech Hellwing, Joe Silk, Nick Kaiser, Adi Nusser, Noam Libeskind
7. “The cosmic web in the Local Universe” *Lorentz Center, Leiden*, January 2020
Chair of the SOC. N Libeskind (chair), R van der Weygaert (co-chair), Joss Bland-Hawthorne, Helene Courtois, Bridget Falck, Florent Leclercq
8. “Diversity of the Local Universe” *Special Astrophysical Observatory of the Russian Academy of Sciences*, October 2019
Member of the SOC. Helene Courtois, Anatoly Klypin, Noam Libeskind, Dmitry Makarov (chair), Lidia Makarova, Simon Pustilnik, Yuri Shchekinov
9. “10 years of CLUES-2019” *Lyon, France*, September 2019. **Chair of the SOC.**
10. “The role of feedback in galaxy formation: from small-scale winds to large-scale outflows ” *AIP, Potsdam, Germany*, September 2018.
Co-Chair of the SOC. Christoph Pfrommer (co-chair), Arianna DiCintio (co-chair), Noam Libeskind (co-chair), Matthias Steinmetz (co-chair), Tanya Urrutia (co-chair), Natasha Foerster-Schreiber, Andrei Kravtsov, Crystal Martin, Jason X Prochaska, Phil Richter, Laura Sales, Ian Smail, Volker Springer, Roman Teyssier, Jacqueline van Gorkom, Steffi Walch, Ellen Zweibel
11. “CLUES-2018: constrained Simulations” *Santa Cruz, Tenerife, Spain*, June 2018.
Chair of the SOC. Noam Libeskind (Chair), Yehuda Hoffman, Stefan Gottlöber, Gustavo Yepes
12. “CLUES-2017: constrained Simulations” *La Cristalera, UAM, Madrid, Spain*, July 2017.
Chair of the SOC. Noam Libeskind (Chair), Yehuda Hoffman, Stefan Gottlöber, Gustavo Yepes
13. “DES Y Theory Workshop ” *DES Y, Hamburg, Germany*, September 2017.
Member of the SOC. Julien Lesgourgues (Chair), Luca Amendola, Mathias Garny, Ibarra, J Jaeckel, Noam I Libeskind, Schwetz, Dominik Schwarz, Jochen Weller, Geraldine Servant, Alexander Westphal
14. “Near Field Cosmology” *University Center Obergurgl, Austria*, April 2016.
Member of the SOC. S Gottlöber (co-chair), H Courtois (co-chair), K Dolag, M Hudson, R de Jong, N Libeskind, H Mo, A Nusser, P Ocvirk, B Tully, M Verheijen
15. “Dwarf galaxies in the local universe” *AIP Thinkshop, Potsdam*, August 2014.
Co-Chair of the SOC. N Libeskind (co-chair), M Steinmetz (co-chair), S Gottlöber (co-chair), C Frenk, J Bullock, A Frebel, S Vegetti, B Willman, L Strigari
16. “Tracing the cosmic web” *Lorentz Center, Leiden*, February 2014.
Co-Chair of the SOC. N Libeskind (co-chair), R van der Weygaert (co-chair), S Shandarin, F Kitaura, E. Tempel, Y Hoffman, T Sousbie
17. ”On the Nature of Satellite and Dwarf Galaxies”, RAS-NAM, Manchester, March 2012
Main organizer of a parallel session with Vassily Belokurov

CONFERENCES LECTURES DELIVERED

- Large-scale structure of the Universe: from galaxies to cosmology, **Invited talk** July 2025
Haapsalu, Estonia
- International Workshop on Galaxy Formation *Osaka, Japan*, **Contributed paper** May 2025

- Mind the Gap: Galaxies and the Large scale structure, *Cordoba, Argentina*, **Invited talk** December 2024
- NFW@30 , *Zhangjiajie, Hunan, China*, **Invited talk** October 2024
- CLUES in Warsaw, *Warsaw, Center for Theoretical Physics PAS*, June 2024
- Cole@60 , *ICC, Durham, UK*, **Invited talk** December 2023
- 550 Years of the Copernican Universe: our Place in the Cosmos” November 2023
- Willhelm and Else Heraeus-Symposium* **Introduction talk**
- Advances in Understanding the Local Universe, June 2023
- Center for Advanced studies, LMU, Munich* **Invited Key Note**
- Fiat Lux *Castel Gandolfo, Vatican Observatory, Italy* **Invited Paper** June 2023
- New Frontiers in Cosmology with the Intrinsic Alignments *Kyoto, Japan* **Invited Paper** December 2022
- 2nd Juszkiewicz Symposium, The non-linear Universe *Warsaw, Poland*; **Invited Paper** September 2022
- CLUES 2022 *Madrid, Spain* **organizer** July 2022
- EAS splinter, *Valencia, Spain* **Invited Paper** June 2022
- Cosmic Cartography *IMPU, Japan Tokyo (virtual)* **Invited Paper** March 2022
- Astrophysical Windows on Dark Matter *The Royal Society, London* **Invited Paper** November 2021
- CLUES 2021 *Virtual* **organizer** July 2021
- CosmicFlows, Large-scale Structure & Visualisation
- Cape Town, South Africa* **Invited Paper** February 2020
- The cosmic web in the Local Universe’ *Leiden, The Netherlands* **Multiple talks** (organizer) January 2020
- Diversity of the Local Universe *Cherkessk, Russia* **Invited Paper** October 2019
- Shanghai Assembly on Cosmology and Galaxy Formation *Shanghai, China* **Invited Paper** November 2019
- CLUES 2019 *Lyon, France* **Invited Paper** September 2019
- EAS, *Lyon, France* **Invited Paper** June 2019
- The role of feedback in in galaxy formation *Potsdam, Germany* **Invited Paper** September 2018
- CLUES 2018 *Tenerife, Spain* **Invited Paper** June 2018
- The Dark Universe *Munich, Germany* **Invited Paper** October 2017
- Polish Astronomical Society meeting *Jelena Gora, Poland* **Invited Paper** August 2017
- Clues 2017 *Madrid, Germany* **Invited Paper** June 2017
- Virgo Meeting *Durham, UK* December 2016
- Galaxy formation and Cosmology *Guangzhou, China*; **Invited Paper** December 2016
- Cosmology and Structure Formation *Soeul, Korea*; **Invited Paper** November 2016
- Cosmic Clues from the Near Field Universe *Haifa, Israel*; **Invited Paper** June 2016
- Near Field Cosmology’ *Obergurgl, Austria*; **Invited Paper, SOC** March 2016
- 1st Roman Juszkiewicz Symposium, The non-linear Universe *Warsaw, Poland*; **Invited Paper** August 2015
- Galaxies Drifting through the cosmic web *Aix-en-Provence, France*; **Paper** July 2015
- Satellites and Streams in Santiago *ESO, Chile*; **Invited Paper** April 2015
- FOF 2015 *IATE Cordoba, Argentina*; **Invited Paper** April 2015
- 100 Years of General Relativity, Heraeus-Stiftung *Potsdam, Germany*; **Invited Paper** March 2015
- The Eagle cosmological simulation meeting *MPA Munich, Germany*; **Invited Paper** December 2014
- Satellite galaxies and dwarfs in the Local Group *Potsdam, Germany*; **Invited Paper** August 2014
- IAU (308): The Zeldovich Universe *Tallinn, Estonia*; **Invited Paper, Panel member** June 2014
- National Astronomy meeting *Portsmouth, UK*; **Paper** June 2014
- SKA Germany chapter meeting *Bielefeld, Germany* **Paper** February 2014
- Tracing the Cosmic Web *Lorentz Center, Holland*; **Invited Review** February 2014
- Galaxies in the cosmic web *University of Chicago, USA*; **Paper** June 2013
- The origin of the Hubble Sequence *IAP, Paris, France*; **Invited Paper** June 2013
- Cosmic Flows: Observations and Simulations *University of Marseilles*; **Invited Paper** June 2013
- Constrained Local Universe Simulations *Madrid, Spain*; **Invited Paper** May 2013
- Virgo Consortium Meeting, *Durham, UK*; **Paper** December 2012
- Falling Walls Lab, *Berlin*; **Paper** November 2012
- CosmoComp meeting, *University of Trieste*; **Paper** and session chair September 2012
- The 62nd Nobel Laureate meeting in Lindau, George Smoot’s Master class Lindau, Germany July 2012
- Constrained Local Universe Simulations, *University of Lyon, France*; **Invited Paper** June 2012
- First Galaxies and Faint Dwarfs”, *KITP, UC Santa Barbara, USA*; **Invited visiting Scholar** April 2012
- Galaxies in the Dark”, *Cafayate, Argentina*; **Invited Paper** August 2011
- Constrained Simulations of the Local Universe”, *University of Sussex, Brighton, UK*; **Paper** June 2011
- Chemistry, dynamics and structure of the Milky Way”,

- KIAA, *Beijing Normal University, China*; **Invited Paper** July 2010
- CLUES Project Network meeting”, *Universidad Autonoma de Madrid, Spain*; **Invited Paper** June 2010
- The AIP’s Scientific Advisory Board’s, *Potsdam, Germany*; **Highlight Paper** November 2009
- Distribution of Mass in the Milky Way Galaxy,
Lorentz Center, University of Leiden; **Invited Paper** July 2009
- The Local Universe: from Dwarf Galaxies to Galaxy Clusters”.
Polish Academy of Sciences, Jablona, Poland; **Paper** June 2009
- Open Questions in Galaxy Formation”,
Leibniz-Institut für Astrophysik Potsdam, Germany; **Poster** May 2008
- New understanding of galaxy formation” *Hebrew University of Jerusalem, Israel*; **Paper** June 2008
- Meeting of the Israeli Physical Society”. *The Weizmann Institute, Israel*; **Paper** December 2007
- Next generation of computational models of baryonic physics in galaxy formation: from protostellar cores to disk galaxies”. *The University of Zurich, Switzerland*; **Poster** September 2007
- Virgo Consortium network meeting”. *The University of Nottingham, UK*; **Paper** September 2006
- Santa Cruz Joelfest”. *UC Santa Cruz, USA*; **Paper** August 2006
- Substructures in dark matter haloes”
The 9th Birmingham-Nottingham Extragalactic workshop, The University of Birmingham; **Paper** July 2006
- The shapes of cosmic structures”. *IAP, Paris, France*; **Poster** June 2005.
- The Royal Astronomical Society’s National Astronomy Meeting”.
The University of Birmingham, UK; **Paper** June 2005
- The Royal Astronomical Society’s National Astronomy Meeting”.
The Open University, UK; **Paper** June 2004
- ”Research Training Network part III: The Physics of the IGM”: *Leiden, Holland* **Poster** June 2004
- The 21st Jerusalem Winter School in Theoretical Physics: The Origin of Galaxies”
The Hebrew University, Israel December 2003
- Research Training Network part II: The Physics of the IGM”: *La Rochelle, France*. June 2003

MASS MEDIA APPEARANCES AND PUBLICATIONS

- In Sept of 2024 a paper I wrote with my student created the largest map of the universe, which drew significant media attention.
<https://www.tagesspiegel.de/wissen/neue-karte-von-megastrukturen-im-kosmos-wo-geht-es-hier-zur-m.html> <https://www.spiegel.de/panorama/adressaenderung-fuer-den-planeten-a-a447b983-d98c-4497-a4cc->
- In June of 2021, a paper I authored made a significant media splash, resulting in over 200 articles across the globe in 34 languages. I performed many interviews regarding this work, radio podcasts, Science News, among others. A few a listed here:
https://www.radio-frei.de/index.php?iid=5.2&ksubmit_show=Artikel&kartikel_id=8894
<https://www.sciencenews.org/article/dark-matter-cosmic-filaments-biggest-spinning-objects-space>
<https://www.independent.co.uk/space/space-tendrils-spinning-universe-explain-b1867683.html>
<https://www.vice.com/en/article/qj8jaq/vast-strands-in-the-cosmic-web-that-connects-the-universe->
- **Vice** interviewed in “There’s Growing Evidence That the Universe Is Connected by Giant Structures”, (10/18) https://www.vice.com/en_us/article/zmj7pw/theres-growing-evidence-that-the-universe-is-con
- **KCRW Berlin**, Interviewed on “When-the-astrophysicist-met-the-artist”, aired 8/11/2018
<https://kcrwberlin.com/2018/11/berlin-science-week-when-the-astrophysicist-met-the-artist>
- **Arte** interview featured in the TV-show “Street Philosophy”, series 6, Episode 3, Aired 24/11/2018
<https://www.fernsehserien.de/streetphilosophy/folgen/6x03-finde-deinen-glauben-1243708>
<https://www.arte.tv/en/videos/079461-004-A/find-your-faith/>
- **Sky & Telescope** Quoted in *Universe 2.0: New Simulations Solve Cosmic Problems*, May 2017
- **Scientific American** *Our Place in the Cosmos*, with R. B. Tully, July and December 2016, Winter 2017
- **RTL/Sat1 DCTP Kultur Magazin**, TV interview by Alexander Kluge, aired 03/2016
- **NHK Cosmic Fronts**, TV interview and scientific consultant, aired 01/2016
- **Märckische Allgemeine Zeitung Profile**: “Weit gereist und viel rumgekommen”, Gerald Dietz, 06/01/2016
- **Science Latest News**: “The most likely spots for life in the Milky Way”, Ramin Skibba 10/12/2015
<http://news.sciencemag.org/space/2015/12/most-likely-spots-life-milky-way>

- **Nature Research Highlight** : “Planes of satellites and the cosmic web, NATURE PHYSICS, 11, 620 (2015)
- **TRT World**, TV interview on New Horizons mission to Pluto. 14/7/2015
- **Where Magazin**, *My perfect day*. Interview and portrait. 06/2015,
<http://www.dinamix.de/fileadmin/where-berlin/Juni%202015/Where%20Magazin%20Juni%202015.html#p=67>
- **Jüdische Allgemeine**, *Galaxien ähneln Menschen*. Interview and portrait. 19/03/2015
<http://www.juedische-allgemeine.de/article/view/id/21786>
- **Scientific American**, *Dwarf Galaxies and the Dark Web*, popular article. 18/02/2014,
<http://www.nature.com/scientificamerican/journal/v310/n3/full/scientificamerican0314-46.html>
- **Nature** documentary debating with Prof David Gross and Prof Robert Laughlin. 09/2012
Confronting the Cosmos <http://www.youtube.com/watch?v=beQ9fZ0jVdE>
- **Deutsche Welle**, *Tomorrow Today*, studio guest 25/04/2011
http://www.dailymotion.com/video/xif3j1_studio-guest-dr-noam-libeskind-tomorrow-today_tech
- **Die Märkische Allgemeine Zeitung**, *Potsdams Kosmologen simulieren ganze Galaxien*. story on our groups work. 27/06/2009.
<http://www.maerkischeallgemeine.de/cms/beitrag/11545369/60709/Potsdams-Kosmologen-simulieren-ganz.html>
- **BBC.co.uk**; *Galactic pancake mystery solved* Article on my work, 07/04/2005
<http://news.bbc.co.uk/2/hi/science/nature/4422555.stm>
- **BBC** television; Interview on *The Sky at Night*. Program 629, ”Eye on the Universe”. NBH V 902T/71 Aired during May 2005
- **Science**; quoted in *The Hunt for Stealth Galaxies* Robert Irion, Vol 308, 20 May 2005

PUBLIC LECTURES

- March 2025, Panel Member *60 years German-Israeli diplomatic relations*, Bundes Ministärium für Bildung und Forschung, Berlin
- February 2025 *Das Universum* Stiftung Planetarium Berlin
- November 2018, Panel member and lecture, “*Creativity and Curiosity*”, part of Berlin Science Week, Zeiss-GrossPlanetarium, Berlin
- June 2017, public lecture “*Our Place in the Cosmos*”, Drumlanrig Castle, Scotland.
- June 2017, public lecture “*Unsere Kosmische Adresse*”, Urania, Berlin.
- March 2017, public lecture “*Unsere Kosmische Adresse*”, Insulaner, Berlin.
- February 2017, public lecture “*Unsere Kosmische Adresse*”, Starry Nights, AIP, Potsdam.
- October 2015, public lecture “*Brücken von Dunkler Materie*” Sternwarte Spandau, Berlin.
- October 2015, public lecture “*Cosmic Coincidences*” centrum, Berlin.
- May 2014, public lecture “*Uncertain, Incomplete and Relative: 20th century questions and 21st century answers*” Bard College, Berlin.
- April 2011, public lecture “*Time*” Katholische Student Gemeinde of Magdeburg University.
- March 2009, lectures for architects in New York City on astronomy and the beauty of the universe.
- January 2007, lectures at a number of local elementary schools in the Frankfurt area, Germany.
- January 2007, the Hebrew University’s Halbert Centre for Canadian Studies public lecture series, “*Canadian Contributions to Cosmology*”.
- June 2005, The House of Commons Young Scientist Fair, UK. Selected and funded to present my work at the Houses of Parliament to an audience of lawmakers, scientists, industrialists and journalists.

THREE MAIN REFERENCES

PROF. MATTHIAS STEINMETZ
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Publication List Noam I Libeskind (as of 6.2025)

ACADEMIC PUBLICATIONS (PUBLISHED, ACCEPTED, AND IN PRESS)

132. Y Muralichandran, **N I Libeskind** & E Tempel *Alignment of Spiral and Elliptical galaxies from Siena Galaxy Atlas with Filaments*, 2025 A & A, accepted
131. M M Muru, J Silk, **N I Libeskind**, S Gottlöber, Y Hoffman, *Fermi-LAT Galactic Center Excess morphology of dark matter in simulations of the Milky Way galaxy*, 2025 PRL, accepted
130. N R Arakelyan, S V. Pilipenko, S Gottlöber, **N I Libeskind**, A Knebe, G Yepes, Y Hoffman, *Variable gravitational potential of Milky Way analogues in HESTIA suite* 2025 PHYS REV D, 112, 4, id.043515
129. A V Antipova, D I Makarov, **N I Libeskind**, E Tempel, A A Marchuk, S S Savchenko, V P Reshetnikov, A E Nazarova, A M Sykova, I V Chugunov *Orientation of galaxy spins relative to filaments of the large-scale structure of the Universe*, 2025 PASA, 42, 84
128. P. Richter, F. R nger, N. Lehner, J.C. Howk, C. P roux, **N I Libeskind** et al *On the prospects for using the forbidden optical [Fe XIV] and [Fe X] intersystem lines to study million-degree gas in the Milky Way halo* 2025 A & A 701, 76
127. E Arjona-G lvez, S Cardona-Barrero, **N I Libeskind**, et al *A physically motivated galaxy size definition across different state-of-the-art hydrodynamical simulations* , 2025 A & A, 699, 301
126. F Runger, M Sparre, P Richter, **N I Libeskind** *Modeling the Distribution of Low-velocity Halo Clouds in the Circumgalactic Medium*, 2025 A& A 700, 131
125. D Makarov, D Makarov , L Makarova, and **N Libeskind** *The frozen outskirts: A cold Hubble flow and the mass of the Local Group*, 2025 A&A 698, 178
124. D. Dolgosheeva, D. Makarov, & **N. Libeskind** *Edge-on galaxies relative to edge-on view of the Local Supercluster*, 2025 A&A 698, 8
123. O M ller, **N I Libeskind** et al *MUSE observations of dwarf galaxies and a stellar stream in the M83 group*, 2025 A & A, 699, 207
122. D Makarov, D Makarov , K Kozyrev, and **N Libeskind** *Line-of-sight mass estimator and the masses of Milky Way and Andromeda*, 2025, MDPI, 11, 144
121. P Wang, X Tang, H Wang, **Noam I. Libeskind**, E Tempel, W Wang, Y Zhang, M Sheng, H Yu, H Xu, *Cosmic Filamenrt Spin, II: Cosmic filament spin and its impact on galaxy spin-filament alignment in cosmological simulation* 2025, ApJ, 983, 100
120. Y Huang, K G Lee, **N I Libeskind**, S Simha, A Valade, J. X Prochaska. *Modeling the Cosmic Dispersion Measure in the $D < 120$ Mpc Local Universe* 2025, MNRAS, 538, 2785
119. K J Kanehisa, M S Pawlowski, **N I Libeskind**, *Andromeda's satellite system: too asymmetric for cold dark matter cosmology?*, 2025 NATURE ASTRONOMY 9, 629, <https://doi.org/10.1038/s41550-025-02480-3>
118. L Lu, I Minchev, T Buck, S Khoperskov, M Steinmetz, **N I Libeskind**, G Cescutti, K C. Freeman. *There is No Place Like Home - Finding Birth Radii of Stars in the Milky Way.* 2024 MNRAS 535, 392
117. W Wang, P Wang, H Guo, X Kang, **Noam I. Libeskind**, D Galarraga-Espinosa, V Springel, R Kannan, L Hernquist, R Pakmor, H Yu, S Bose, Q Guo, L Yu, C Hernandez-Aguayo, *The boundary of cosmic filaments* 2024 MNRAS 532, 4604
116. A Valade, **N I Libeskind**, D Pomarede, R B Tully, Y. Hoffman, S Pfeifer, and E Kourkchi *Basins Of Attraction in the Local Universe* , 2024 NATURE ASTRONOMY 8, 1610, <https://doi.org/10.1038/s41550-024-02370-0>
115. M A Raj, P Awad, R F Peletier, R Smith, U Kuchner, R van de Weygaert, **N I Libeskind**, M Canducci, P Tino, K Bunte *The large-scale structure around the Fornax-Eridanus Complex*, 2024, A&A 690, 92
114. S Khoperskov, I Minchev, M Steinmetz, B Ratcliffe, J C. Walcher, **N I Libeskind**, *Why does the Milky Way have a bar* 2024 MNRAS 533, 3975

113. C. Boettner, P. Dayal, M. Trebitsch, **N Libeskind**, K. Rice, C. Cockell, and I. Tieleman *Populating The Galaxy: Characterising Planet Demographics throughout the Milky Way by combining High-Resolution Galaxy Formation Simulations and Planet Population Synthesis Models* 2024 A&A 686, 167B
112. O Müller, N Heesters, M Pawłowski, F Lelli, K J Kanehisa, **N I Libeskind** *The phase-space distribution of the M 81 satellite system*, 2024 A&A 683, 250
111. Olex E., Knebe A., **N I Libeskind** et al. *HINORA: A method for detecting ring-like structures in 3D point distributions and its application to the Local Volume Galaxy catalogue* 2024 PASA 41, 18
110. Y Hoffman, A Valade, **N I Libeskind**, R. B. Tully, S Pfeifer, S. Gottlöber, D Pomarède, *The large scale velocity field from the Cosmicflows-4 data* 2024 MNRAS 527, 3788
109. S. Taibi, M. S. Pawłowski, S. Khoperskov, M. Steinmetz & **N I Libeskind** *A portrait of the vast polar structure as a young phenomenon: Hints from its member satellites* 2024 A&A 681, A73
108. Y Xu, X Kang, & **N I Libeskind**, et al *A Rotating Satellite Plane around Milky Way-like Galaxy from the TNG50 Simulation* 2023 APJ 924, 128
107. Y Yaryura, **N I Libeskind**, et al *Environmental effects on associations of dwarf galaxies* 2023 MNRAS 525, 415
106. A Osipova, S Pilipenko, S Gottlöber, **N I. Libeskind**, O. Newton, J.G. Sorce, G. Yepes, *Hermeian haloes: Extreme objects with two interactions in the past* 2023 PHYSICS OF THE DARK UNIVERSE 42, 101328
105. S Pfeifer, S Gottloeber, Y Hoffman, **N I Libeskind**, A Valade, *A Local Universe model for constrained simulations*, 2023 MNRAS 523, 5985
104. J B Salomon, Y Hoffman, **N I Libeskind** *Exploring the centre of mass properties of LG-like galaxies*, 2022 MNRAS 523, 2759
103. D Makarov, D Makarov, S Khoperskov, L Makarova, & **N I Libeskind**, *The LMC impact on the kinematics of the Milky Way satellites: clues from the running solar apex*, 2023, MNRAS 521, 3540
102. O Newton, **N I Libeskind**, A Knebe et al *The Undiscovered Ultradi diffuse Galaxies of the Local Group*, 2023 APJLETTERS 946, 37
101. K Naidoo, W Hellwing, M Bilicki, S Pfeifer, **N Libeskind** Y Hoffman *Constrained simulations of the local Universe with Modified Gravity* , 2023 PRD 107, 4
100. S Kopershkov, I Minchev, **N I Libeskind**, et al *The stellar halo in Local Group Hestia simulations I. The in-situ component and the effect of mergers* 2023, A&A 67, 89
99. S Kopershkov, I Minchev, **N I Libeskind**, et al *The stellar halo in Local Group Hestia simulations II. The accreted component* 2023 A&A 67, 90
98. S Kopershkov, I Minchev, **N I Libeskind**, et al *The stellar halo in Local Group Hestia simulations III. Chemical abundance relations for accreted and in-situ stars* 2023 A&A 67, 89
97. A Valade, **N I Libeskind**, Y Hoffman, S Pfeifer *Testing Bayesian reconstruction methods from peculiar velocities* , 2023 MNRAS 519, 2981
96. D. Martínez-Delgado, **N I Libeskind**, et al *Hidden Depths in the Local Universe: the Stellar Stream Legacy Survey* 2023 A&A 671, A141
95. L Biaux, C Scannapieco, S Nuza, P Richter, M Damle, M Hani **N I Libeskind**, *Kinematics of the Local Group gas and galaxies in the Hestia simulations* 2022 MNRAS 517, 6170
94. A Dupuy, **N I Libeskind**, et al *Anisotropic mass accretion onto the Local Group with HESTIA*, 2022, MNRAS 516, 4576
93. S Pfeifer, **N I Libeskind**, Y Hoffman, W A Hellwing, M Bilicki, K Naidoo, *COWS: A filament finder for Hessian cosmic web identifiers* 2022 MNRAS 514, 470
- 93a. S Pfeifer, **N I Libeskind**, Y Hoffman, W A Hellwing, M Bilicki, K Naidoo, *COWS: COsmic Web filament finder*, 2022 ASTROPHYSICS SOURCE CODE LIBRARY Available online: <https://ascl.net/2201.011>
92. O Newton, **N I Libeskind**, A Knebe et al *Hermeian haloes: Field haloes that interacted with both the Milky Way and M31*, 2022 MNRAS 514, 3612

91.

90. E Carlesi, Y Hoffman, **N I Libeskind** *Estimation of the masses in the Local Group by supervised machine learning*, 2022 MNRAS 513, 2385
89. N Arora, A V Macciò, S Courteau, T Buck, **N I Libeskind**, *NIHAO-LG: The uniqueness of Local Group dwarf galaxies* 2022 MNRAS 512, 6134
88. M Damle, M Sparre, P Richter, M H Hani, S E. Nuza, C Pfrommer, R J. J. Grand, Y Hoffman, **N I Libeskind**, J G. Sorce, M Steinmetz, E Tempel, M Vogelsberger, P Wang. *Cold and Hot gas view of the Milky Way – M31 system in the HESTIA simulations*, 2022 MNRAS 512, 3717
87. Y Xu, Y Luo, X Kang, Z Li, Z Li, P Wang, **N I Libeskind**, *The Quenching of massive disk galaxies in the Illustris-TNG simulation*, 2022 APJ 928, 100
86. P.-A. Oria, B. Famaey, G. F. Thomas, R. Ibata, J. Freundlich, L. Posti, M. Korsaga, G. Monari, O. Müller, **N. I. Libeskind**, and M. S. Pawlowski *The phantom dark matter halos of the Local Volume in the context of modified Newtonian dynamics* 2021 APJ 923, 68
85. J.-B. Salomon, R. Ibata, C. Reyl, Y. Hoffman, B. Famaey, **N I Libeskind** *The proper motion of Andromeda from Gaia eDR3: confirming a nearly radial orbit* 2021, MNRAS 507, 2592
84. H-Z Chen, X Kang, P Wang, **N I Libeskind**, *Cosmic web-halo connection between twin universes*, 2021 APJ, 920, 89
83. Y Hoffman, A Nusser, A Valade, **N I Libeskind**, R B Tully, *From Cosmicflows distance moduli to unbiased distances and peculiar velocities*, 2021 MNRAS 505, 3380
82. P Wang, M S Pawlowski, **N I Libeskind**, X Kang, Q Guo, E Tempel, *Lopsided satellite distributions around isolated central galaxies*, 2021 APJ 914, 78
81. P Wang, **N I Libeskind**, E Tempel, X Kang, Q Guo, *Possible observational evidence for cosmic filament spin*, 2021 NATURE ASTRONOMY 5, 839
80. O Müller, M Pawlowski, F Lelli, K Fahrion, M Rejkuba, M Hilker, H Jerjen, **N I Libeskind**, *The coherent motion of Cen A dwarf satellite galaxies remains a challenge for Λ CDM cosmology*, 2021, A&A LETTERS, 645, 5
79. P Lemos, N Jeffrey, L Whiteway, O Lahav, **N I Libeskind**, Y Hoffman, *Sum of the masses of the Milky Way and M31: A likelihood-free inference approach*, 2021 PHYS. REV. D, 103, 2, id.023009
78. J Lee & **N I Libeskind**, *The halo spin transition as a probe of dark energy*, 2020 APJ 902, 22
77. P Wang, E Tempel, M S Pawlowski, X Kang, **N I Libeskind**, *The alignment of satellite systems with cosmic filaments in the SDSS DR12*, 2020 APJ 900, 129
76. C Y Yaryura, M G Abadi, S Gottlöber, **N I Libeskind**, S A Cora, A N Ruiz, C A Vega-Martínez, G Yepes, P Behroozi *Associations of dwarf galaxies in a Λ CDM Universe with a semi-analytical approach*, 2020 MNRAS 499, 5932
75. J Lee, **N I Libeskind**, & S Ryu *The Effect of Massive Neutrinos on the Halo Spin Flip Phenomenon* 2020 ApJL 898, 27
74. **N I Libeskind**, E Carlesi, R Grand, A Khalatyan, A Knebe, R Pakmor, S Pilipenko, M Pawlowski, E Tempel, P Wang, H M Courtois, S Gottlöber, Y Hoffman, I Minchev, C Pfrommer, J Sorce, V Springel, M Steinmetz, R B Tully, M Vogelsberger, G Yepes. *The Hestia Project: High resolution Environmental Simulations of The Immediate Area* 2020 MNRAS 498, 2968
73. P Wang, X Kang **N I Libeskind**, Q. Guo, S Gottlöber, W Wang *A robust determination of halo environment in the cosmic field*, 2020, NEW ASTRONOMY, 80, 101405
72. M Tsizh, B. Novosyadlyj, Y. Holovatch, **N I Libeskind**, *Large-scale structures in the Λ CDM Universe: network analysis and machine learning*, 2020 MNRAS 495, 1311
71. A Dupuy, H Courtois, **N I Libeskind**, & D Guinet *Segmenting the Universe into dynamically coherent basins*, 2020 MNRAS 493, 3513
70. E Carlesi, Y Hoffman, S Gottloeber, **N I Libeskind**, A Knebe, G Yepes, S V. Pilipenko, *On the Mass Assembly History of the Local Group*, 2020 MNRAS LETTERS 491, 2

69. L F Quiroga, J C Munoz-Cuartas, I Rodrigues, **N I Libeskind**, *Studying the formation of a polar structures in the system AM 2229-735*, 2020 MNRAS 491, 1887
68. **N Libeskind**, E Carlesi, O Müller, M S Pawlowski, Y Hoffman, H M Courtois, R. B. Tully, D Pomarède, S Gottlöber, M Steinmetz, J Sorce, A Knebe, *The orientation of planes of dwarf galaxies in the quasi-linear universe*, 2019, MNRAS, 490, 3786
67. H M Courtois, R C. Kraan-Korteweg, A Dupuy, R Graziani **N I Libeskind**, *A kinematic confirmation of the hidden Vela large-scale structure*, 2019 MNRAS LETTERS 490, 57
66. D.A. Noreña, J.C. Muñoz-Cuartas, L.F. Quiroga, and **N I Libeskind** *Substructures in minor mergers' tidal stream* 2019 MEXICAN JOURNAL OF ASTRONOMY AND ASTROPHYSICS, 55, 273
65. **N I Libeskind**, Y Hoffman, *Cosmic Mariners*, October 2019, SKY & TELESCOPE
64. C C Gong, **N I Libeskind**, E Tempel, Q Guo, S Gottlöber, G Yepes, P Wang, J Sorce, M Pawlowski, *The Origin of Lopsided Satellite Galaxy Distribution in Galaxy Pairs*, 2019, MNRAS 488, 3
63. A Dupuy, H M Courtois, F Dupont, F Denis, R Graziani, Y Copin, D Pomarede, **N I Libeskind**, E Carlesi, B Tully, D Guinet, *Partitioning the universe into gravitational basins using cosmic velocity field*, 2019, MNRAS LETTERS 489, 1
62. W Cui, A Knebe, **N I Libeskind** et al, *The large scale environment from cosmological simulations II: redshift evolution of the large scale environment*, 2019 MNRAS 485, 2367
61. P Wang, Q Guo, **N I Libeskind**, E Tempel, C Wei, X Kang, *The shape alignment of satellite galaxies in galaxy pairs in SDSS*, 2019, MNRAS 484, 4325
60. P Wang, Q Guo, X Kang & **N I Libeskind** *The Spin Alignment of Galaxies with the Large-scale Tidal Field in Hydrodynamic Simulations*, 2018 APJ 866, 138
59. N. R. Arakelyan, S. V. Pilipenko, & **N I Libeskind** *Spatial Distribution of Globular Clusters in the Galaxy* 2018 MNRAS 481, 918
58. R. Mostoghiu, A Di Cintio, A Knebe, **N I Libeskind**, I Minchev, C Brook , *CLUES about M33: the reversed radial stellar age gradient in the outskirts of Triangulum galaxy* 2018 MNRAS 480, 4455
57. W. A. Hellwing, M. Bilicki & **N I Libeskind**, *Uneven flows: On cosmic bulk flows, local observers, and gravity*, 2018 PRD, 97, 10, id.103519
56. P Wang, Y Luo, X Kang, **N I Libeskind**, L Wang, Y. Zhang, E Tempel, Q Guo *Alignment between satellites and central galaxies with SDSS DR7: large scale environment dependence* 2018, APJ 859, 115
55. Y Hoffman, E Carlesi, D Pomarede, R. B. Tully, H. M. Courtois, S. Gottlöber, **Noam I Libeskind**, J. G. Sorce, G. Yepes, *The Quasi-Linear Nearby Universe*, 2018, NATURE ASTRONOMY, Vol 2, 680-687
54. K Dixon, I T Iliev, S Gottlöber, Y Hoffman, K Dixon, G Yepes, **N I Libeskind**, *Reionization of the Milky Way, M31, and their satellites I: reionization history and star formation*, 2018 MNRAS, 477, 867
53. A Knebe, **N I Libeskind** et al., *MULTIDARK-GALAXIES: data release & first results*, 2018 MNRAS 474, 5206
52. **N I Libeskind** et al., *Tracing the Cosmic web*, 2018 MNRAS 473, 1195
51. M McLeod, **N I Libeskind**, O Lahav, & Y Hoffman *Estimating the Mass of the Local Group using Machine Learning Applied to Numerical Simulations*, 2017 JCAP 12, 34
50. B Kubik, **N I Libeskind**, A Knebe, Y Hoffman, H M Courtois, *Universal Accretion in Warm and Cold Dark Matter*, 2017 MNRAS 472, 4099
49. M Pawlowski, **N I Libeskind**, et al, *Considerations on how to investigate planes of satellite galaxies*, 2017 AN 338, 854
48. E Tempel, T Tuvikene, R Kipper & **N I Libeskind**, *Merging groups and clusters of galaxies from the SDSS data: The catalogue of groups and potentially merging systems*, 2017 A&A, 602, 100
47. D Forgan, P Dayal, C Cockell & **N I Libeskind** *Evaluating Galactic Habitability Using High Resolution Cosmological Simulations of Galaxy Formation*, 2017 INT. JOUR. ASTRO BIO., 16, 60
46. **N I Libeskind**, Q. Guo, E Tempel, & R Ibata *The lopsided distribution of satellite galaxies*, 2016 APJ, 830, 121

45. **N I Libeskind** & R. B. Tully *Our Place in the Cosmos*, 2016 SCIENTIFIC AMERICAN, 315, 1 (July 2016)
 - 45a **N I Libeskind** & R. B. Tully *Our Place in the Cosmos*, SCIENTIFIC AMERICAN, **Special Collector's Edition: Wonders of the Cosmos**, Vol 26, No 4, Fall 2017
 - 45b **N I Libeskind** & R. B. Tully *Our Place in the Cosmos*, SCIENTIFIC AMERICAN, **Top Science Stories of 2016**, Vol 25, No 5, Winter 2016
 - 45c **N I Libeskind** & R. B. Tully *Laniakea: Unsere Kosmische Zuhause in einer neuen Kartografie des Weltalls*, SPEKTRUM DER WISSENSCHAFT (November 2016) **Cover Story**
 - 45d **N I Libeskind** & R. B. Tully *Il Nostro posto nel cosmo*, LE SCIENZE, 577, (September 2016) **Cover Story**
44. O Metuki, **N I Libeskind** & Y Hoffman *The abundance and environment of dark matter halos*, 2016 MNRAS, 460, 297
43. E Carlesi, J Sorce, Y Hoffman, S Gottlöber, G Yepes, **N I Libeskind**, S Pilipenko, A Knebe, H Courtois, B Tully, & M Steinmetz *Constrained Local Universe Simulations: A Local Group Factory*, 2016 MNRAS 458, 900
42. I Pahwa, **N I Libeskind**, E Tempel, Y Hoffman, R B Tully, H M Courtois, S Gottlöber & M Steinmetz *The weak alignment of galaxy spin with the shear field in observations* 2016 MNRAS, 457, 695
41. J Sorce, P Creasy, & **N I Libeskind** *Galaxies in the disc central surface brightness gap lie preferentially in sheets* 2016 MNRAS, 455, 2644
40. **N I Libeskind**, E Tempel, Y Hoffman, R B Tully, & H M Courtois *Filaments from the galaxy distribution and from the velocity field in the local universe*, 2015 MNRAS LETTERS, 453, L108
39. **N I Libeskind**, Y Hoffman, R B Tully, H M Courtois, D Pomarede, S Gottlöber & M Steinmetz *Planes of satellites and the cosmic web*, 2015 MNRAS, 452, 1052
 - 39a **N I Libeskind** et al. Research highlight: *Planes of satellites and the cosmic web*, 2015 NATURE PHYSICS, 11, 620
38. E Tempel, Q Guo, R Kipper, **N I Libeskind**, *The alignment of satellite galaxies and cosmic filaments: observations and simulations*, 2015 MNRAS, 450, 2727
37. R B Tully, **N I Libeskind**, I D Karachentsev, V E Karachentseva, L Rizzi, E J Shaya *Two planes of satellites in the Centarus A Group*, 2015 APJL, 802, 25
36. Q Guo, E Tempel & **N I Libeskind** *Galaxies in Filaments have more satellites: The influence of the cosmic web on the satellite luminosity function in the SDSS*, 2015 APJ, 800, 112
35. N. Gillet, P. Ocvirk, D. Aubert, A. Knebe, **N I Libeskind**, G. Yepes, S. Gottlöber & Y. Hoffman *Vast planes of satellites in a high resolution simulation of the Local Group: comparison to Andromeda*, 2015 APJ, 800, 34
34. O Metuki, **N I Libeskind**, Y Hoffman, R Crain, & T Thuens *Galaxy properties and the cosmic web in simulations*, 2015 MNRAS, 446, 1458
33. S E Nuza, F Kitaura, S Heß, **N I Libeskind** & V Müller *The cosmic web of the Local Universe: cosmic variance, matter content and its relation to galaxy morphology*, 2014 MNRAS, 445, 988
32. Ocvirk, N. Gillet, D. Aubert, A. Knebe, **N I Libeskind**, J. Chardin, S. Gottlöber, G. Yepes, Y. Hoffman *The reionization of galactic satellite populations* 2014 APJ, 794, 20
31. **N I Libeskind**, A Knebe, Y Hoffman, & S Gottlöber *The Universal nature of Subhalo Accretion* 2014 MNRAS, 443, 1274
30. **N I Libeskind**, Y Hoffman & S Gottlöber *The velocity shear and vorticity across redshifts and non-linear scales*, 2014 MNRAS, 441, 1974
29. **N I Libeskind** *Dwarf Galaxies and the Cosmic Web*, 2014 SCIENTIFIC AMERICAN, 310, 46-51
28. E Tempel, **N I Libeskind**, Y Hoffman, Liivamägi & A. Tamm *Orientation of cosmic web filaments with respect to the underlying velocity field* 2014 MNRAS LETTERS, 437L 11
27. P Ocvirk, D Aubert, J Chardin, A Knebe, **N I Libeskind**, S Gottlöber, G Yepes & Y Hoffman *High resolution simulations of the reionization of a Milky Way - M31 galaxy pair* 2013 APJ 777, 51

26. E Tempel & **N I Libeskind**, *Galaxy spin alignment in filaments and sheets: observational evidence* 2013 APJ LETTERS 775, 42
25. **N I Libeskind**, A Di Cintio, A Knebe, S Gottlöber, Y Hoffman, G Yepes, M Steinmetz, & L Martinez-Vaquero *Cold versus Warm Dark Matter in Constrained Cosmological Simulations of the Local Group*, invited paper on Warm Dark Matter. 2013 PASA, 30, 39.
24. P Dayal, **N I Libeskind**, & J. S. Dunlop. *CLUES on the past: Local Group progenitors amongst high-redshift Lyman Break Galaxies* 2013 MNRAS 431, 3618
23. **N I Libeskind**, Y Hoffman, M Steinmetz, S Gottlöber, A Knebe & S Hess *Cosmic vorticity and the origin halo spins* 2013 APJ LETTERS, 766, L15
22. A Di Cintio, A Knebe, **N I Libeskind**, C Brook, G Yepes, S Gottlöber, & Y Hoffman, *Size matters: the non-universal density profile of subhaloes in hydrodynamical simulations* 2013 MNRAS 431, 1220.
21. **N I Libeskind**, Y Hoffman, J Forero-Romero, S Gottlöber, A Knebe, M Steinmetz & A Klypin. *The velocity shear tensor: tracer of halo alignment* 2013 MNRAS 428, 2489
20. A Knebe, **N I Libeskind**, F Pearce, P Behroozi, J Casado, K Dolag, R Dominguez-Tenreiro, P Elahi, H Lux, S I Muldrew, J Onions. *Galaxies going MAD: The Galaxy-Finder Comparison Project*, 2013 MNRAS 428, 2039
19. Y Hoffman, O Metuki, G. Yepes S, Gottloeber, J Forero-Romero, **N I Libeskind** & A Knebe, *A kinematical classification of the Cosmic Web*, 2012 MNRAS 425, 2049
18. A Di Cintio, A Knebe, **N I Libeskind**, Y Hoffman, S Gottlöber, & G Yepes *Applying scale-free mass estimators to the Local Group in Constrained Local Universe Simulations* 2012 MNRAS 423, 1883
17. **N I Libeskind**, Y Hoffman, A Knebe, M Steinmetz, S Gottlöber, O Metuki & G. Yepes, *The cosmic web and the orientation of angular momenta*, 2012 MNRAS LETTERS 421, 137
16. P Dayal & **N I Libeskind** *Local Group progenitors: Lyman- α bright* 2011 MNRAS LETTERS 419, 9
15. A Di Cintio, A Knebe, **N I Libeskind**, G Yepes, S Gottlöber, Y Hoffman, *Too small to succeed? Lighting up massive dark matter Milky Way subhaloes* 2011 MNRAS LETTERS 417, 74
14. **N I Libeskind**, A Knebe, S Gottlöber, G Yepes, & Y Hoffman. *Disentangling the stellar from the dark matter halo*. 2011 MNRAS 418, 336
13. A Knebe, **N I Libeskind**, T Doumler, Y Hoffman, S Gottlöber, & G Yepes *Renegade Subhaloes in the Local Group* 2011 MNRAS LETTERS 417, 56
12. A J Deason, I G McCarthy, A Font, N. W. Evans, C. S. Frenk, V Belokurov, **N I Libeskind**, R A Crain & T Theuns. *Mismatch and Misalignment: Dark Haloes and Satellites of Disc Galaxies*. 2011, MNRAS 415, 2607
11. A Knebe, **N I Libeskind**, S R Knollmann, L A. Martinez-Vaquero, G Yepes, Stefan Gottlöber, & Y Hoffman. *The Luminosities of Backsplash Galaxies in Constrained Simulations of the Local Group*. 2011, MNRAS 412, 529
10. **N I Libeskind**, A Knebe, Y Hoffman, S Gottlöber, G Yepes, & M Steinmetz, *The Preferred Direction of Infalling Satellite Galaxies in the Local Group*. 2011 MNRAS 411, 1525
9. A Knebe, **N I Libeskind**, S R Knollmann, G Yepes, S Gottlöber, & Y Hoffman. *The impact of baryonic physics on the shape and radial alignment of substructures in cosmological dark matter haloes*. 2010 MNRAS 405, 1119
8. **N I Libeskind**, G Yepes, A Knebe, S Gottlöber, Y Hoffman, & S Knollman. *Constrained simulations of the Local Group: on the radial distribution of substructures*. 2010 MNRAS 401, 1189
7. **N I Libeskind**, C S Frenk, S Cole, R Bower, A R Jenkins, J C Helly, *How common is the Milky Way - satellite galaxy alignment?* 2009 MNRAS 399, 550
6. M Metz, P Kroupa & **N I Libeskind** *The orbital poles of Milky Way satellite galaxies: a rotationally supported disc-of-satellites inconsistent with CDM substructures*. 2008 APJ 680, 287
5. **N I Libeskind**, *The Formation of Satellite Galaxies and Their Associated Black Holes* 2007 OBS. 127, 146
4. **N I Libeskind**, S Cole, C S Frenk, T Okamoto, A Jenkins. *Satellite Systems Around Galaxies in Hydrodynamical Simulation*. 2007 MNRAS 374, 16

3. **N I Libeskind**, S Cole, C S Frenk, J C Helly. *The Effect of Gravitational Recoil on Black Holes Forming in a Hierarchical Universe*. 2006 MNRAS 368, 1381
2. **N I Libeskind**, C S Frenk, S Cole, J C Helly, A Jenkins, J F Navarro, C Power. *The Distribution of Satellite Galaxies: The Great Pancake*. 2005 MNRAS 363, 146
1. K Tereszchuk, P F Bernath, N F Zobov, S V Shirin, O L Polyansky, **N I Libeskind**, J Tennyson, L Wallace. *Laboratory Spectroscopy of Hot Water near 2 Microns and Sunspot Spectroscopy in the H-Band Region*. 2000 APJ, 577, 496

ACADEMIC PUBLICATIONS, SUBMITTED

- C Y Yaryura, M G Abadi, **N I Libeskind**, S Gottlöber, S A Cora, G Yepes *A continuous parametrization of the cosmic web* A&A submitted
- D Attard, L Conaboy, **N Libeskind**, S. Pillipenko, K Dixon, I T. Iliev *Reionization in HESTIA: Studying reionization in the LG through zoom simulations* 2025 submitted to MNRAS
- J S Gannon, A Di Cintio, D A. Forbes, G García-Bethencourt, J P Brodie, **N I Libeskind**, W J. Couch, J Hartk. *Ultra-Diffuse, Ultra-Different: Observed vs. Simulated Ultra-Diffuse Galaxies Live in Fundamentally Different Halos* 2025, Submitted to MNRAS
- D. Pomarede, R. B Tully, A Valade, **N Libeskind** & Y Hoffman *Cosmography of the Sloan Basin of Attraction and Neighborhood* 2024 ApJ Submitted
- R Chisholm, E D’Onghia, **N I Libeskind**, S Lucchini, A J Fox, M Setinemetz *Coronal Gas in Magellanic-Analog Dwarfs: Insights from the HESTIA simulations* 2025 APJ submitted

ACADEMIC PUBLICATIONS (IN PREP)

- A Valade, Y Hoffman, **N I Libeskind**, *Initial conditions from Hamiltonian Monte Carlo constrained realisations using first order Lagrangian Perturbation theory* , 2025 MNRAS in prep
- L Baius, S Nuza, C Scannapieco, P Richter, **N I Libeskind** *Probing the kinematics of the Local Group with chemically-enriched gas in the Hestia simulations* 2025, A& A, submitted

CONFERENCE PROCEEDINGS, NON-REFEREED PUBLICATIONS

7. Li et al *Dark Matter Physics with Wide Field Spectroscopic Surveys* Astro2020: Decadal Survey on Astronomy and Astrophysics, science white papers, no. 252; Bulletin of the American Astronomical Society, Vol. 51, Issue 3, id. 252 (2019)
6. Luke Connaboy, Ililan Iliev, & **N I Libeskind** *The reionisation of the local universe in the HESTIA suite* NIC Symposium 2022, Jülich, Germany, edited by Marcus Müller, Christine Peter, Alexander Trautmann, ISBN 978-3-95806-646-5, <http://hdl.handle.net/2128/31840> September 2022, v, p151
5. Oliver Newton & **N I Libeskind** *Hermeian galaxies: Cosmic messengers between the Milky Way and Andromeda* High Performance Computing in Science and Engineering, pp. 38-39 (2022) Publisher: Leibniz Rechenzentrum der Bayerische Akademie der Wissenschaften <https://doku.lrz.de/display/PUBLIC/Books+with+results+on+LRZ+HPC+Systems>
4. **N I Libeskind** *Environmental simulations of the Local Group*. High performance Computing in Science and Engineering, Eds.: P Bastian, D Kranzlmüller, H Brüche, M Brehm, G Mathias. 2021, p48
3. **N I Libeskind** *The beaming of subhalo accretion*. Proceedings of the 308 IAU meeting “The Zeldovich Universe”, Eds.: R. van de Weigaert, J Einasto, S Shandarin, E Saar, 2016, 308, 456
2. I Pahwa & **N I Libeskind** *Alignments of galaxies and halos in hydrodynamical simulations*. Proceedings of the 308 IAU meeting “The Zeldovich Universe”, Eds.: R. van de Weigaert, J Einasto, S Shandarin, E Saar, 2016, 308, 477
1. S Gottlöber, **N I Libeskind**, G Yepes, & Y Hoffman. *Studying the Local Group within the CLUES Project*. Proceedings of the XLVth Recontres de Moriond, Eds.: A. Auge, J. Dumarchez, J. Tran Thanh Van, The Gioi Publishers, 2010, pp. 123-126