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 EMPLOYMENT &
 EDUCATION

2021 – <i>pres.</i>	Senior Lecturer (Asst. Prof.)	Hebrew University of Jerusalem
2020 – 2021	KITP Postdoctoral Fellow	Kavli Institute of theoretical Physics, University of California, Santa Barbara
2016 – 2020	Tschira Postdoctoral Fellow	Yale University, jointly with Heidelberg Institute of Theoretical Studies
2011 – 2016	Ph.D.; Physics <i>Thesis: Violent Galaxies at High Redshift: Streams and Disk Instability</i>	Hebrew University of Jerusalem <i>Advisor:</i> Avishai Dekel
2009 – 2011	M.Sc.; Physics (<i>Magna cum Laude</i>)	Hebrew University of Jerusalem
2006 – 2009	B.Sc.; Physics, Math (<i>Magna</i>)	Hebrew University of Jerusalem

 RESEARCH
 SUMMARY

Publications total (first or second author, advising student or equal contribution)	55 (20)
Citations total (first or second author, advising student or equal contribution)	3550 (930)
<i>h</i> -index, <i>m</i> -index (= <i>h</i> -index/years since first publication)	28, 2.1
Presentations (colloquia, conference invited, conference contributed)	89 (41, 22, 26)
CPU hours awarded as principal investigator (PI) on national supercomputers	~17M; ~\$91K
Externally Funded Grants awarded as principal investigator (PI)	5; ~\$788K
Internal Grants awarded as principal investigator (PI)	1; ~\$295K
Observing proposals on HST/JWST awarded as co-investigator (CI)	3

 SELECT
 GRANTS/AWARDS

2023	PI, Bi-National Science Foundation (BSF) (\$118 000)
2023	PI, National Science Foundation - Bi-National Science Foundation (NSF-BSF) (\$165 000)
2023	CI, JWST Cycle 2 (Archival or Theory Research)
2021	Co-PI, Extreme Science and Engineering Discovery Environment (XSEDE) (193K node hours, ~\$51K);
2021	PI, Bi-National Science Foundation (BSF) (\$75 000)
2021	PI, Israeli Science Foundation (ISF) personl research grant (880 000 NIS, ~\$275 000)
2021	PI, ISF new faculty equipment grant (490 000 NIS, ~\$155 000)
2021	CI, JWST Cycle 1 (13.9 Primary Spacecraft Hours)
2021	PI, Startup grant, Hebrew University (~\$295 000)
2020	PI, XSEDE (152K node hours, ~\$40K);
2019	CI, HST Cycle 27 Archival or Theory Research;
2015	Prof. R. Rahamimoff Travel Grant for Young Scientists, BSF;

 SELECT
 PROFESSIONAL
 ACTIVITIES

2023- <i>pres.</i>	Grant Reviewer, JWST Telescope Allocation Committee
2022- <i>pres.</i>	Grant Reviewer, Israeli Science Foundation
2021	Conference Organizer - On the Origin, Nature, and Mixing of Multiphase Gas in Astrophysics;
2018 – 2019	Member, Yale Astrophysics Colloquium Committee;
2017 – 2019	Member, Yale Telescope Allocation Committee (TAC);
2015 – <i>pres.</i>	Referee, MNRAS, ApJ, A&A;
2015 – 2016	Member, HUJI Astrophysics Colloquium Committee;

SUPERVISION
EXPERIENCE**Current Research Group Leadership:**

Currently leading a research group of 8 members - 3 postdocs, 1 PhD student, 2 Masters student, and 2 senior undergraduate students

Previous Research Supervision:

Co-supervised additional 7 researchers - 2 postdocs, 2 PhD students, 1 Masters student, and 2 undergraduate students

TEACHING
EXPERIENCE

2009-2016	Junior Lecturer (HUJI)	Electricity, Magnetism & Waves Classical Mechanics Electricity & Magnetism Analytical Electrodynamics Thermal Physics Advanced Astrophysics: Cosmology & Galaxy Formation	undergraduate, non-physics science majors undergraduate, engineering majors undergraduate, physics majors undergraduate, physics majors undergraduate, physics majors graduate, physics majors
2017-2020	Guest Lecturer (Yale)	Physical Processes in Astronomy The Physics of Astrophysics	undergraduate, astronomy majors graduate, astronomy majors
2021- <i>pres.</i>	Senior Lecturer (HUJI)	Electricity, Magnetism & Waves Mechanics & Special Relativity Electricity & Magnetism Relativity & Gravitation	undergraduate, non-physics science majors undergraduate, physics majors undergraduate, physics majors graduate, physics majors

SELECT
OUTREACH AND
COMMUNITY
SERVICE

2023	Mentor, Academic Research Program for High School students, sponsored by Israeli Ministry of Education
2019	Astronomy on Tap, New Haven
2019	Judge at New Haven Science Fair
2015-2016	Volunteer scientist in the "Mada Ba-Ktana" (bite-sized science) program, sponsored by HUJI

SELECT TALKS
(SINCE 2019)

12/24	Colloquium: Astrophysics Colloquium	ITC, Harvard University;
10/24	Conference: Computational Galaxy Formation	Schloss Ringberg, Germany;
09/24	Colloquium: Astrophysics Colloquium	University of California Santa Barbara;
09/24	Workshop: Toward a Holistic Understanding of the Multi-scale, Multiphase Circumgalactic Medium	Aspen Center for Physics;
08/24	Conference: UCSC Galaxy Formation Workshop	UCSC;
05/24	Conference: The Physical Processes Shaping the Stellar and Gaseous Histories of Galaxies	Pisa, Italy;
05/24	Colloquium: Astrophysics Colloquium	University of Milano Bicocca;
02/24	Colloquium: Astrophysics Colloquium	Tel Aviv University;
09/23	Workshop: CGM@ND	Kylemore abbey, Ireland;
05/23	Conference: Neutral Hydrogen as a Cosmological Probe Across Cosmic Time	Nazareth, Israel;
02/23	Conference: The Multiphase Circumgalactic Medium	Schloss Ringberg, Germany;
12/22	Colloquium: Astrophysics Colloquium	Bar Ilan University;
11/22	Colloquium: Astrophysics Colloquium	New Mexico State University;
09/22	Conference: What Matter(s) Around Galaxies	Champoluc, Italy;
08/22	Conference: UCSC Galaxy Formation Workshop	UCSC;
05/22	Workshop: Advances in Cosmology Through Numerical Simulations	MIAbPP, Germany;
03/22	Conference: Cosmic Cartography	Kavli IPMU (via Zoom);
01/22	Colloquium: Astrophysics Colloquium	Open University of Israel (via Zoom);
06/21	Conference: Galaxy Cluster Formation II (GCF 2021)	ESO (via Zoom);
06/21	Colloquium: BC Galaxy Summer Seminar	U. of Victoria (via Zoom);
05/21	Colloquium: IPARCOS Astro Seminar	UCM Madrid (via Zoom);
02/21	Workshop: Fundamentals of Gaseous Halos	KITP (via Zoom);
04/20	Colloquium: Astrophysics Seminar	CEA Saclay (via Zoom);
02/20	Colloquium: Astrophysics Colloquium	UMASS Amherst;
02/20	Colloquium: CCAPP Seminar	CCAPP, the OSU;
11/19	Colloquium: Astrophysics Colloquium	Ben Gurion University;
11/19	Colloquium: Astrophysics Colloquium	Weizmann Institute;
11/19	Colloquium: Astrophysics Colloquium	Tel Aviv University;
11/19	Colloquium: Astrophysics Colloquium	Technion;
11/19	Colloquium: Astrophysics Colloquium	Hebrew University of Jerusalem;
11/19	Colloquium: Galaxy Journal Club Seminar	STScI, Baltimore;
10/19	Conference: First Galaxies, First Structures	IAP, Paris;
10/19	Colloquium: Astrophysics Colloquium	NYU;
08/19	Conference: UCSC Galaxy formation Workshop	UCSC;
06/19	Conference: What Matter(s) Between Galaxies	Abazia di Spineto;

- ORCID ID: 0000-0001-8057-5880

- *Total publications:*

52 peer-reviewed with 3 more under review; 3550 citations with *h*-index 28 (based on NASA ADS); 4406 citations with *h*-index 29 (based on Google Scholar)

- *Publications as first or second author (equal contribution or student supervisor):*

20 peer-reviewed; 930 citations (based on NASA ADS); 1101 citations (based on Google Scholar)

First or Second Author Publications (Equal Contribution or Student Supervisor, counts from NASA ADS)

1. Mandelker, N., Ginzburg, O., Dekel, A., Bournaud, F., Krumholz, M. R., Ceverino, D., Primack, J. R.; **2025**, MNRAS Letters 538, L9 (3)
Formation of Giant Clumps in High- z Disc Galaxies by Compressive Turbulence –Lead–
2. Yao, Z., Mandelker, N., Oh, S. P., Aung, H., Dekel, A.; **2025**, MNRAS 536, 3053 (0)
The effects of cloud geometry and metallicity on shattering and coagulation of cold gas –Supervised–
3. Aung, H., Mandelker, N., Dekel, A., Nagai, D., Semenov, V., van den Bosch, F. C.; **2024**, MNRAS 532, 2965 (4)
Entrainment of hot gas into cold streams: the origin of excessive star formation rates at cosmic noon –Supervised–
4. Lu, Y. S., Mandelker, N., Oh, S. P., Dekel, A., van den Bosch, F. C., Springel, V., Nagai, D., van de Voort, F.; **2024**, MNRAS 527, 11256 (10)
The Structure and Dynamics of Massive High- z Cosmic-Web Filaments: Three Radial Zones in Filament Cross-Sections –Supervised–
5. Ceverino, D., Mandelker, N., Snyder, G. F., Lapiner, S., Dekel, A., Primack, J. R., Ginzburg, O., Larkin S.; **2023**; MNRAS 522, 3912; (13)
Effects of feedback on galaxies in the VELA simulations: elongation, clumps and compaction –Major contribution–
6. Pasha, I., Mandelker, N., van den Bosch, F. C., Springel, V., van de Voort, F.; **2023**, MNRAS 520, 2692; (17)
Quenching in Cosmic Sheets: Tracing the Impact of Large Scale Structure Collapse on the Evolution of Dwarf Galaxies –Supervised–
7. Dekel, A., Mandelker, N., Bournaud, F., Ceverino, D., Guo, Y., Primack, J. R.; **2022**, MNRAS, 511, 316; (24)
Clump survival and migration in VDI galaxies: an analytical model versus simulations and observations
–Equal Contribution–
8. Mandelker, N., van den Bosch, F. C., Springel, V., van de Voort, F., Burchett, J. N., Butsky, I. S., Nagai, D., Oh, S. P.; **2021**; ApJ, 923, 115; (23)
Thermal Instabilities and Shattering in the High-Redshift WHIM: Convergence Criteria and Implications for Low-Metallicity Strong HI Absorbers –Lead–
9. Mandelker, N., van den Bosch, F. C., Nagai, D., Dekel, A., Birnboim, Y., Aung, H.; **2020**, MNRAS, 498, 2415; (29)
Ly α Blobs from Cold Streams Undergoing Kelvin-Helmholtz Instabilities –Lead–
10. Mandelker, N., Nagai, D., Aung, H., Dekel, A., Birnboim, Y., van den Bosch, F. C.; **2020**, MNRAS, 494, 2641; (70)
Instability of supersonic cold streams feeding galaxies - IV. Survival of radiatively cooling streams –Lead–
11. Mandelker, N., van den Bosch, F. C., Springel, V., van de Voort, F.; **2019**, ApJL, 881, L20; (27)
Shattering of Cosmic Sheets due to Thermal Instabilities: A Formation Channel for Metal-free Lyman Limit Systems –Lead–

12. Mandelker, N., Nagai, D., Aung, H., Dekel, A., Padnos, D., Birnboim, Y.; **2019**, MNRAS, 484, 1100; **–Lead– (49)**
Instability of supersonic cold streams feeding galaxies - III. Kelvin-Helmholtz instability in three dimensions
13. Aung, H., Mandelker, N., Nagai, D., Dekel, A., Birnboim, Y.; **2019**, MNRAS, 490, 181; **–Supervised– (24)**
Kelvin-Helmholtz instability in self-gravitating streams
14. Mandelker, N., van Dokkum, P. G., Brodie, J., van den Bosch, F. C., Ceverino, D.; **2018**, ApJ, 861, 148;
Cold Filamentary Accretion and the Formation of Metal-poor Globular Clusters and Halo Stars **–Lead– (67)**
15. Padnos, D., Mandelker, N., Birnboim, Y., Dekel, A., Krumholz, M. R., Steinberg, E.; **2018**, MNRAS, 477, 3293;
Instability of supersonic cold streams feeding galaxies - II. Non-linear evolution of surface and body modes of Kelvin-Helmholtz instability **–Supervised– (32)**
16. Mandelker, N., Dekel, A., Ceverino, D., DeGraff, C., Guo, Y., Primack, J. R.; **2017**, MNRAS, 464, 635;
Giant clumps in simulated high-z Galaxies: properties, evolution and dependence on feedback **–Lead– (133)**
17. Mandelker, N., Padnos, D., Dekel, A., Birnboim, Y., Burkert, A., Krumholz, M. R., Steinberg, E.; **2016**, MNRAS, 463, 3921;
Instability of supersonic cold streams feeding galaxies - I. Linear Kelvin-Helmholtz instability with body modes **–Lead– (55)**
18. Mandelker, N., Dekel, A., Ceverino, D., Tweed, D., Moody, C. E., Primack, J. R.; **2014**, MNRAS, 443, 3675; **(144)**
The Population of Giant Clumps in Simulated High-z Galaxies: In Situ and. Ex Situ, Migration and Survival **–Lead–**
19. Dekel, A., Mandelker, N.; **2014**, MNRAS, 444, 2071;
An Analytic Solution for the Minimal Bathtub Toy Model: Challenges in the Star Formation History of High-z Galaxies **–Equal Contribution– (151)**
20. Hershko, E., Mandelker, N., Gheorghiu, G., Sheinkopf, H., Cohen, I., Levy, O.; **2008**, Engineering Failure Analysis, 15, 20;
Assessment of Fatigue Striation Counting Accuracy Using High Resolution Scanning Electron Microscope **–Equal Contribution– (55)**

Additional Publications (Major Contributions noted, counts from NASA ADS)

21. Li, Z., Dekel, A., Sarkar, K. C., Aung, H., Giavalisco, M., Mandelker, N., Tacchella, S.; **2023**, A&A 690, A.108
Feedback-Free Starbursts at Cosmic Dawn: Observable Predictions for JWST **(44)**
22. Hasan, F., Burchett, J., N., Hellinger, D., Elek, O., Nagai, D., Faber, S. M., Primack, J. R., Koo, D. C., Mandelker, N., Woo, J. **2024**; ApJ 970, 177;
Filaments of the Slime Mold Cosmic Web and How They Affect Galaxy Evolution **(9)**
23. Hafen, Z., Sameer, Hummels, C., Charlton, J., Mandelker, N., Wijers, N., Bullock, J., Faerman, Y., Lehner, N., Stern, J., **2024**; MNRAS 528, 39;
The Halo21 Absorption Modeling Challenge: Lessons From "Observing" Synthetic Circumgalactic Absorption Spectra **–Major Contribution– (7)**
24. Strawn, C., et al. (28 authors incl. Mandelker, AGORA collaboration); **2024**; ApJ 962, 29;
The AGORA High-resolution Galaxy Simulations Comparison Project. VI: Similarities and Differences in the Circumgalactic Medium **(5)**

25. Furtak, L. J., et al. (34 authors incl. Mandelker, RELICS collaboration); **2024**; MNRAS Letters, 527, L7; (15)
Reaching for the stars – JWST/NIRSpec spectroscopy of a lensed star candidate at $z = 4.76$
26. Fudamoto, Y., Inoue, A. K., Coe, D., Welch, B., Acebron, A., Ricotti, M., Mandelker, N., et al. (30 authors, RELICS collaboration); **2024**; ApJ 961, 71; (6)
The Extended [CII] under Construction? Observation of the brightest high- z lensed star-forming galaxy at $z = 6.2$
27. Martin, A., et al. (35 authors incl. Mandelker); **2023**; ApJ 955, 106; (7)
JWST Imaging of Earendel, the Extremely Magnified Star at Redshift $z = 6.2$
28. Dekel, A., Sarkar, K. C., Birnboim, Y., Mandelker, N., Li, Z., **2023**; MNRAS, 523, 3201; (173)
Efficient formation of massive galaxies at cosmic dawn by feedback-free starbursts –Major Contribution–
29. Hasan, F., Burchett, J., N., Abeyta, A., Hellinger, D., Mandelker, N., Primack, J. R., Faber, S. M., Koo, D. C., Elek, O., Nagai, D., **2023**; ApJ, 950, 114; (19)
The Evolving Effect of Cosmic Web Environment on Galaxy Quenching
30. Dekel, A., Tziperman, O., Sarkar, K., Ginzburg, O., Mandelker, N., Ceverino, D., Primack, J. R. **2023**; MNRAS, 521, 4299; (7)
Conditions for Clump Survival in High- z Disc Galaxies
31. Emonts, B. H. C., Lehnert, M. D., Yoon, I., Mandelker, N., Villar-Martin, M., Miley, G. K., De Breuck, C., Perez-Torres, M. A., Hatch, N. A., Guillard, P. **2023**; **Science**, 379, 1323; (22)
A cosmic stream of atomic carbon gas connected to a massive radio galaxy at redshift 3.8
32. Vanzella, E., et al. (30 authors incl. Mandelker, RELICS collaboration); **2023**; ApJ, 945, 53; (77)
JWST/NIRCam Probes Young Star Clusters in the Reionization Era Sunrise Arc
33. Li, Z., Dekel, A., Mandelker, N., Freundlich, J., Thibaut, F. **2023**; MNRAS, 518, 5356; (12)
The Response of Dark Matter Haloes to Gas Ejection: CuspCore II
34. Welch, B., Coe, D., Zitrin, A., Diego, J., M., Windhorst, R., Mandelker, N., et al. (16 authors, RELICS collaboration); **2023**; ApJ, 943, 2; (25)
RELICS: Small-scale Star Formation in Lensed Galaxies at $z = 6 - 10$
35. Welch, B., et al. (63 authors incl. Mandelker, RELICS collaboration); **2022**; ApJ, 940, 1; (56)
JWST Imaging of Earendel, the Extremely Magnified Star at Redshift $z = 6.2$
36. Ginzburg, O., Dekel, A., Mandelker, N., Krumholz, M. R. **2022**; MNRAS, 513, 6177; (28)
The evolution of turbulent galactic discs: gravitational instability, feedback, and accretion
37. Dickey, C., et al. (13 authors incl. Mandelker, IQ Collaboration); **2021**; ApJ, 915, 53; (33)
IQ Collaboratory II: The Quiescent Fraction of Isolated, Low Mass Galaxies Across Simulations and Observations
38. Strawn, C., Roca-Fábrega, S., Mandelker, N., Primack, J. R., Stern, J., Ceverino, D., Dekel, A., Wang, B., Dange, R., **2021**; MNRAS, 501, 4948; (21)
O VI Traces Photoionized Streams with Collisionally Ionized Boundaries in Cosmological Simulations of $z \sim 1$ Massive Galaxies –Major Contribution–

39. Ginzburg, O., Huertas-Company, M., Dekel, A., Mandelker, N., Snyder, G. F., Ceverino, D., Primack, J. R. **2021**; MNRAS, 501, 730; (13)
The nature of giant clumps in high- z discs: a deep-learning comparison of simulations and observations
40. Huertas-Company, M., Guo, Y., Ginzburg, O., Lee, C. T., Mandelker, N., and 10 additional coauthors **2020**; MNRAS, 499, 814; (42)
Stellar masses of giant clumps in CANDELS and simulated galaxies using machine learning
41. Simons, R. C., Kassin, S. A., Snyder, G. F., Primack, J. R., Ceverino, D., Dekel, A., Hayward, C. C., Mandelker, N., and 4 additional coauthors **2021**; ApJ, 874, 59; (64)
Distinguishing Mergers and Disks in High-redshift Observations of Galaxy Kinematics
42. van de Voort, F., Springel, V., Mandelker, N., van den Bosch, F. C., Pakmor R.; **2019**, MNRSL, 482, L85; (189)
Cosmological simulations of the circumgalactic medium with 1 kpc resolution: enhanced H I column densities
–Major Contribution–
43. Guo, Y., Rafelski M., Bell E. F., Conselice C. J., Dekel A., Faber S. M., Giavalisco M., Koekemor A. M., Koo D. C., Lu Y., Mandelker, N., and 12 additional coauthors **2018**; ApJ, 853, 108; (96)
Clumpy Galaxies in CANDELS: II. Physical Properties of UV-bright Clumps at $0.5 \leq z \leq 3$
44. Kim, J. H., et al. (43 authors incl. Mandelker, AGORA Collaboration); **2016**; ApJ, 833, 202; (114)
The AGORA High-resolution Galaxy Simulations Comparison Project. II. Isolated Disk Test
45. Tomassetti, M., Dekel, A., Mandelker, N., Ceverino, D., Lapiner S., Faber S. M., Kneller O., Primack, J. R., Sai T. **2016**; MNRAS, 458, 4477; (58)
Evolution of Galaxy Shapes from Prolate to Oblate through Compaction Events
46. Tachella, S., Dekel, A., Carollo M. C., Ceverino, D., DeGraf C., Lapiner S., Mandelker, N., Primack, J. R. **2016**; MNRAS, 458, 242; (243)
Evolution of Density Profiles in High- z Galaxies: Compaction and Quenching Inside-Out
47. Tachella, S., Dekel, A., Carollo M. C., Ceverino, D., DeGraf C., Lapiner S., Mandelker, N., Primack, J. R. **2016**; MNRAS, 457, 2790; (294)
The Confinement of Star-Forming Galaxies into a Main Sequence through Episodes of Gas Compaction, Depletion, and Replenishment
48. Inoue, S., Dekel, A., Mandelker, N., Ceverino, D., Bournaud F., Primack, J. R. **2016**; MNRAS, 456, 2052; (94)
Non-Linear Violent Disk Instability With High Toomre's Q in High Redshift Clumpy Disk Galaxies
–Major Contribution–
49. Zolotov, A., Dekel, A., Mandelker, N., Tweed D., Inoue S., DeGraf C., Ceverino, D., Primack, J. R., Barro G., Faber S. M. **2016**; MNRAS, 456, 2052; (471)
Non-Linear Violent Disk Instability With High Toomre's Q in High Redshift Clumpy Disk Galaxies
50. Guo, Y., Ferguson H. C., Bell E. F., Koo D. C., Conselice C. J., Giavalisco M., Kassin S., Lu Y., Lucas R., Mandelker, N., and 12 additional coauthors **2015**; ApJ, 800, 39; (216)
Clumpy Galaxies in CANDELS: I. The Definition of UV Clumps and the Fraction of Clumpy Galaxies at $0.5 \leq z \leq 3$

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51. Moody, C. E., Guo Y., Mandelker, N., Ceverino, D., Mozena M., Koo D. C., Dekel, A., Primack, J. R.; **2014**, MNRAS, 444, 1389; **(56)**
Star Formation and Clumps in Cosmological Galaxy Simulations with Radiation Pressure Feedback
52. Ceverino, D., Dekel A., Mandelker, N., Bournaud F., Burkert A., Genzel R., Primack, J. R.; **2012**, MNRAS, 420, 3490; **–Major Contribution–(153)**
Rotational Support of Giant Clumps in High-z Disc Galaxies

Submitted

53. Ginzburg, O., Dekel, A., Mandelker, N., Bournaud, F., Ceverino, D., Primack, J.; **2025**, submitted to A&A, arXiv:2501.07097; **(0)**
On the origin of compressive turbulence in protoclumps in high redshift disks
54. Dekel, A., Stone, N. H. Dutta Chowdhury, D., Gilbaum, S., Li, Z., Mandelker, N., van den Bosch, F. C.; **2024**, submitted to A&A, arXiv:2409.18605; **(4)**
Growth of Massive Black-Holes in FFB Galaxies at Cosmic Dawn
55. Dutta Chowdhury, D., Dekel, A. Mandelker, N., Ginzburg, O., Genzel, R.; **2024**, submitted to A&A, arXiv:2409.01589; **(1)**
Radial Transport in High-Redshift Disk Galaxies Dominated by Inflowing Streams