

Nir Mandelker - Curriculum Vitae

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Languages: **English** (native), **Hebrew** (native), **French** (conversant)

Education:

Ph.D., Physics

Focus in theoretical astrophysics

Advisor: Prof. Avishai Dekel

Dissertation: Violent Disk Instability as a Driver of Galaxy Evolution at High Redshift

**Racah Institute of Physics
Hebrew University of Jerusalem
2011-2016 (expected June 2016)**

M.Sc., Physics

Magna cum Laude

Focus in theoretical astrophysics

Advisor: Prof. Avishai Dekel

Dissertation: Giant Clumps in High-z Disc Galaxies

**Racah Institute of Physics
Hebrew University of Jerusalem
2009-2011**

B.Sc., Double Major in Physics & Mathematics

Magna cum Laude

**Hebrew University of Jerusalem
2006-2009**

Teaching Experience:

Teaching Assistant

- Taught weekly lab and recitation sections in introductory and advanced physics courses
- Taught full lectures in professors' absences
- Assisted in curriculum development
- Graded student homework, lab assignments, and exams

**Racah Institute of Physics
Hebrew University of Jerusalem
2009-2016**

Professional Service:

- Coordinator, Astrophysics seminar series, **2015-2016**
- Coordinator, Cosmology and Galaxy Formation group meetings and seminar series, **2013-2015**

**Racah Institute of Physics
Hebrew University of Jerusalem**

Military Service:

Aircraft failure and crash investigator & scanning electron microscope operator

Rank: Master Sgt.

Research Project: Analytical estimation of the number of load cycles leading to fatigue failure

**Failure Analysis Laboratory
Israeli Air Force
2002-2006**

Programming Skills:

- Running and analyzing simulations using the ART and RAMSES codes
- Programming in Fortran90, C++, Matlab and LATEX.

Publications:

Published

- **Nir Mandelker**, Avishai Dekel, Daniel Ceverino, Dylan Tweed, Christopher E. Moody and Joel Primack,
“The Population of Giant Clumps in Simulated High-z Galaxies: In Situ and. Ex Situ, Migration and Survival”
Monthly Notices of the Royal Astronomical Society (MNRAS) 443, 3675–3702 (2014)
[doi:10.1093/mnras/stu1340](https://doi.org/10.1093/mnras/stu1340)
- Avishai Dekel and **Nir Mandelker**,
“An Analytic Solution for the Minimal Bathtub Toy Model: Challenges in the Star Formation History of High-z Galaxies”
MNRAS 444, 2071–2084 (2014) [doi: 10.1093/mnras/stu1427](https://doi.org/10.1093/mnras/stu1427)
- Adi Zolotov, Avishai Dekel, **Nir Mandelker**, Dylan Tweed, Shigeki Inoue, Colin DeGraf, Daniel Ceverino, Joel Primack, Guillermo Barro, and Sandra M. Faber,
“Compaction and Quenching of High-z Galaxies in Cosmological Simulations: Blue and Red Nuggets”
MNRAS 450, 2327–2353 (2015) [doi: 10.1093/mnras/stv740](https://doi.org/10.1093/mnras/stv740)
- Yicheng Guo, Henry C. Ferguson, Eric F. Bell, David C. Koo, Christopher J. Conselice, Mauro Giavalisco, Susan Kassin, Yu Lu, Ray Lucas, **Nir Mandelker**, and 12 additional coauthors,
“Clumpy Galaxies in CANDELS: I. The Definition of UV Clumps and the Fraction of Clumpy Galaxies at $0.5 < z < 3$ ”
The Astrophysical Journal (ApJ), Volume 800, Issue 1, article id. 39, 21 pp. (2015)
[doi:10.1088/0004-637X/800/1/39](https://doi.org/10.1088/0004-637X/800/1/39)
- Christopher E. Moody, Yicheng guo, **Nir Mandelker**, Daniel Ceverino, Mark Mozena, David C. Koo, Avishai Dekel and Joel Primack,
“Star Formation and Clumps in Cosmological Galaxy Simulations with Radiation Pressure Feedback”
MNRAS 444, 1389–1399 (2014) [doi: 10.1093/mnras/stu1534](https://doi.org/10.1093/mnras/stu1534)
- Daniel Ceverino, Avishai Dekel, **Nir Mandelker**, Frederic Bournaud, Andreas Burkert, Reinhard Genzel and Joel Primack,
“Rotational Support of Giant Clumps in High-z Disc Galaxies”
MNRAS 420, 3490–3520 (2012) [doi: 10.1111/j.1365-2966.2011.20296.x](https://doi.org/10.1111/j.1365-2966.2011.20296.x)
- Emmanuel Hershko, **Nir Mandelker**, George Gheorghiu, Haim Sheinkopf, Izack Cohen and Ofer Levy,
"Assessment of Fatigue Striation Counting Accuracy Using High Resolution Scanning Electron Microscope"
Engineering Failure Analysis, Vol. 15, Issues 1-2, Jan.-Mar. 2008, pp. 20-27 [doi:10.1016/j](https://doi.org/10.1016/j)

Submitted

- Sandro Tachella, Avishai Dekel, Marcella C. Carollo, Daniel Ceverino, Colin DeGraf, Sharon Lapiner, **Nir Mandelker** and Joel Primack,
“The Confinement of Star-Forming Galaxies into a Main Sequence through Episodes of Gas Compaction, Depletion, and Replenishment”
[arXiv:1509.02529](https://arxiv.org/abs/1509.02529), submitted to MNRAS
- Sandro Tachella, Avishai Dekel, Marcella C. Carollo, Daniel Ceverino, Colin DeGraf, Sharon Lapiner, **Nir Mandelker** and Joel Primack,
“Evolution of Density Profiles in High-z Galaxies: Compaction and Quenching Inside-Out”
[arXiv:1509.00017](https://arxiv.org/abs/1509.00017), submitted to MNRAS

Awards and Honors:

• Prof. R. Rahamimoff travel grant for young scientists: BSF	2015
• Racah prize for outstanding Ph.D. students: Racah Institute of Physics, Hebrew University of Jerusalem	2015
• Research travel grant: Hebrew University Authority for R&D	2014
• Rosenblum Prize for outstanding PhD students in gravitation, astrophysics and cosmology: Racah Institute of Physics, Hebrew University of Jerusalem	2012
• WorldQuant Scholarship for outstanding PhD students: WorldQuant Foundation	2012
• Scholarship for excellence: Dept. of physics, Hebrew University of Jerusalem	2009
• Dean's List: Dept. of physics, Hebrew University, 3 consecutive years	2006-2009

Oral Presentations:

• Harvard University: ITC Seminar	09/15
• Columbia University: Astronomy Seminar	09/15
• Yale University: Galaxy Lunch (astronomy seminar)	09/15
• Institute for Advanced Studies: Astrophysics Lunch Seminar	09/15
• UC Santa Cruz: IMPS Seminar	08/15
• UC Santa Cruz: Galaxy Workshop	08/15
• IAU General Assembly: Focus Meeting 18, Scale-Free Processes in the Universe	08/15
• IAU General Assembly: Symposium 319, Galaxies at High Redshift and Their Evolution Over Cosmic Time	08/15
• UC Santa Cruz: CANDELS Team Meeting	07/15
• Abbazia di Spineto: IGM@50 Conference, Is the Intergalactic Medium Driving Star Formation?	06/15
• Technion - Israel Institute of Technology: Workshop in honor of Reinhard Genzel	04/15
• UC Santa Cruz: Galaxy Workshop	08/14
• Space Telescope Science Institute: CANDELS Team Meeting	07/14
• Commissariat a l'Energie Atomique (CEA), Saclay: RAMSES users meeting	06/14
• Laboratoire d'Astrophysique de Marseille: LAM Cosmology Workshop, Semianalytic Models and Hydrodynamic Simulations	06/14
• Hebrew University: Fundamental Processes that Shape Galaxies	03/14
• UC Santa Cruz: Galaxy Workshop	08/13
• UC Santa Cruz: Student talk at UC-HiPACC's 2013 International Summer School on Astro-Computing	08/13
• Institut Astrophysique de Paris: The Origin of the Hubble Sequence Conference	06/13
• Hebrew University: Student talk at The 30 th Jerusalem Winter School in Theoretical Physics on Early Galaxy Formation in LCDM Cosmology	01/13
• Hebrew University: Meeting of the Israeli Physics Society	12/12
• UC Santa Cruz: Galaxy Workshop	08/12

Poster Presentations:

- **Oxford University:** IAU Symposium 311, Galaxy Masses as Constraints for Formation Models, celebrating the career of Roger Davies | 07/14
- **Institut Astrophysique de Paris:** The Origin of the Hubble Sequence Conference | 06/13