

BENEDIKT DIEMER

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EDUCATION

PhD in Astronomy University of Chicago (Advisor: Andrey Kravtsov) Thesis: On the (non-)universality of halo density profiles	<i>Chicago, IL</i> 09/2009 - 08/2015
Master of Physics University of Manchester (third year at UC Santa Barbara)	<i>Manchester, UK</i> 09/2004 - 07/2008

APPOINTMENTS

University of Maryland Assistant Professor in the Department of Astronomy NHFP Einstein Fellow	<i>College Park, MD</i> since 08/2020 10/2019 - 07/2020
Harvard-Smithsonian Center for Astrophysics (CfA) NHFP Einstein Fellow Institute for Theory and Computation (ITC) Fellow	<i>Cambridge, MA</i> 08/2018 - 09/2019 09/2015 - 07/2018

TEACHING EXPERIENCE

Instructor, UMD ASTR 340, <i>Origin of the Universe</i> (cosmology for non-majors)	Fall 2020/2021
Instructor, UMD ASTR 670, <i>ISM and gas dynamics</i> (grad hydrodynamics and ISM)	Spring 2021

OUTREACH EXPERIENCE

Co-founder of the arts and science collaboration <i>The Fabric of the Universe</i>	since 2014
Arts and science collaboration/exhibition <i>Brains & Cosmic Web</i>	2019
Presenter, Cambridge Science Festival	April 2019
Presenter of <i>Astronomy Conversations</i> (public outreach talks), Adler Planetarium	2011 - 2015

ADVISING & MENTORING

Katya Leidig	UMD PhD student; main adviser	since 2020
Calvin Osinga	UMD PhD student; main adviser	since 2020
Jakob Wachter	UMD Undergraduate; main adviser	since 2021
Shmuel Bialy	UMD postdoc fellow	since 2021
Spencer Scott	Harvard senior thesis, now PhD student at U. Arizona	since 2018
Tae-hyeon Shin	Stony Brook postdoc	since 2020
Enia Xhakaj	UCSC PhD student; comm. member, co-advising with A. Leauthaud	since 2019

SELECTED AWARDS & GRANTS

Distinguished Faculty Teaching Prize, UMD Astronomy	2020/2021
NASA Einstein Fellowship	08/2018 - 07/2020
Nathan Sugarman Award for Excellence in Grad. Research, Enrico Fermi Inst.	06/2015
Arts, Science & Culture Graduate Collaboration Grant, UChicago / SAIC	11/2014
McCormick Fellowship, UChicago	09/2009 - 06/2011
Platt Prize for Theoretical Physics, University of Manchester	07/2008
Scholarship from the German Academic Foundation (Studienstiftung)	09/2007 - 07/2008

PROFESSIONAL SERVICE & SKILLS

Journal peer review	ApJ, MNRAS, and JCAP (18 articles in total)
Review panels	Panel reviewer for NSF AAG 2020 Reviewer for ERC Advanced Grant 2020 Reviewer for NASA Fellowships NESSF 2018, FINESST 2019/2020
Committee service	UMD Graduate selection committee (2021) UMD Equity, Diversity & Inclusion committee (2021) ITC Fellowship Selection Committee (2016, 2017, 2018, 2019) ITC Visitor Committee (2017/18, 2018/19)
Conference organization	Splashback Workshop at SLAC/UCSC, April 2019 (in collaboration with A. Leauthaud, S. Adhikari, E. Xhakaj)
Programming	Python, C/C++, MPI
Major public codes	<i>Colossus</i> , <i>SPARTA</i> , <i>Ulula</i>

NON-ACADEMIC PROFESSIONAL EXPERIENCE

jambit GmbH	08/2008 - 07/2009
Software Architect	<i>Munich, Germany</i>
Humana People to People	11/2002 - 12/2003
Voluntary Development Instructor	<i>Durban, South Africa / Nacala, Mozambique</i>

SELECTED KEY PUBLICATIONS

Diemer, <i>Flybys, orbits, splashback: subhalos and the importance of the halo boundary</i> , ApJ 909, 112	2021
Diemer, <i>Universal at last? The splashback mass function of dark matter halos</i> , ApJ 903, 87	2020
Diemer, <i>The splashback radius of halos from particle dynamics: III. Halo catalogs, merger trees, and host-subhalo relations</i> , ApJS 251, 17	2020
Diemer, Stevens, Lagos & 9 co-authors, <i>Atomic and molecular gas in IllustrisTNG galaxies at low redshift</i> , MNRAS 487, 1529	2019
Diemer & Joyce, <i>An accurate physical model for halo concentrations</i> , ApJ 871, 168	2019
Diemer, <i>COLOSSUS: A python toolkit for cosmology, large-scale structure, and dark matter halos</i> , ApJS 239, 35	2018
Diemer, Stevens, Forbes & 10 co-authors, <i>Modeling the atomic-to-molecular transition in cosmological simulations of galaxy formation</i> , ApJS 238, 33	2018

Diemer, Mansfield, Kravtsov & More, <i>The splashback radius of halos from particle dynamics: II. Dependence on mass, accretion rate, redshift, and cosmology</i> , ApJ 843, 140	2017
Diemer, <i>The splashback radius of halos from particle dynamics: I. The SPARTA algorithm</i> , ApJS 231, 5	2017
More, Diemer & Kravtsov, <i>The splashback radius as a physical halo boundary and the growth of halo mass</i> , ApJ 810, 36	2015
Diemer & Kravtsov, <i>A universal model for halo concentrations</i> , ApJ 799, 108	2015
Diemer & Kravtsov, <i>Dependence of the outer density profiles of halos on their mass accretion rate</i> , ApJ 789, 1	2014
Diemer, More, & Kravtsov, <i>The pseudo-evolution of halo mass</i> , ApJ 766, 25	2013

INVITED TALKS AND SEMINARS

Colloquium, IRyA-UNAM Morelia, Mexico (online presentation)	11/06/2020
Astrophysics Seminar, Cardiff University (online presentation)	10/14/2020
Galaxy Crawl, University of Arizona (online presentation)	06/09/2020
Cosmology Seminar, MPA Munich	09/24/2019
Cosmology & Extragalactic Seminar, University College London, UK	09/11/2019
Simulation Lunch, Oxford University, UK	09/09/2019
Group Seminar, LPNHE/Sorbonne, Paris	07/04/2019
Lunch Seminar, Argonne National Lab	05/07/2019
Physics Colloquium, University of Arizona	04/26/2019
Colloquium, University of Maryland	03/27/2019
Astrophysics Seminar, UC Santa Barbara	03/21/2019
Physics Colloquium, UC Santa Barbara	03/20/2019
Galaxy Journal Club, STScI	09/21/2018
BCCP Cosmology Seminar, UC Berkeley	04/17/2018
Cosmology Seminar, Stanford University	04/16/2018
FLASH Seminar, UC Santa Cruz	11/09/2017
Colloquium, University of Michigan	10/12/2017
Theoretical Astrophysics Seminar, University of Zurich	07/14/2017
Colloquium, University Observatory Munich	07/05/2017
Astrophysics Seminar, Hebrew University	06/27/2017
A&A Seminar, Tel Aviv University	06/14/2017
TAPIR Seminar, CalTech	04/21/2017
Seminar, UC Riverside	04/19/2017
Group seminar, UCLA	04/17/2017
High-energy phenomena seminar, Harvard/CfA	04/05/2017
AstroLunch Seminar, Carnegie Mellon University	03/14/2017
Colloquium, ASIAA, Taipei	04/13/2016
APEC Seminar, Kavli IPMU, Tokyo	04/07/2016
YCAA Seminar, Yale University	10/20/2015
CIERA Seminar, Northwestern University	12/01/2014
Particle Astrophysics Seminar, Fermilab	11/10/2014
BCCP Cosmology Seminar, UC Berkeley	10/07/2014
KIPAC Cosmology Seminar, Stanford University	10/06/2014

CONFERENCE TALKS

NHFP Fellows Symposium, Washington DC <i>Modeling the interstellar medium, and other fun with cosmological hydro simulations</i>	10/22/2019
KICC 10th Anniversary Symposium, Cambridge, UK <i>The splashback radius as a physical halo boundary</i>	09/19/2019
Matera Oscura, Matera, Italy (invited review talk) <i>Dark matter in halos and large-scale structure</i>	09/05/2019
Alpine Cosmology Workshop, La Berarde, France <i>Caustics, orbits, splashback: New insights into halo dynamics and structure</i>	07/01/2019
Zoom-in and out, Nordita, Stockholm <i>Modeling HI, H₂, and the ISM in cosmological simulations of galaxy formation</i>	06/20/2019
Splashback Workshop, SLAC <i>The splashback radius in everyday life</i>	04/30/2019
8th KIAS workshop on cosmology and structure formation, Seoul (invited talk) <i>Caustics, orbits, splashback: New insights on halo dynamics and structure</i>	11/06/2018
Einstein Fellows Symposium, Harvard-Smithsonian CfA <i>The splashback radius of dark matter halos</i>	10/02/2018
Santa Cruz Galaxy Workshop, UCSC <i>Modeling the atomic-to-molecular transition in cosmological simulations of galaxy formation</i>	08/07/2018
Numerical Galaxy Formation Workshop, Schloss Ringberg, Germany <i>Adventures in modeling the HI/H₂ transition in cosmological simulations</i>	03/21/2018
Harvard-Heidelberg star formation workshop, Cambridge MA <i>Adventures in modeling molecular gas in cosmological simulations</i>	11/15/2017
KITP Conference on the galaxy-halo connection, UCSB (invited review talk) <i>Universality, history, and circumstance: On the structure and boundary of CDM halos</i>	05/16/2017
SnowPAC, Snowbird UT (invited talk) <i>The splashback radius as a physical halo boundary</i>	03/16/2016
SnowCluster, Snowbird UT <i>On the (non-)universality of cluster density profiles and concentrations</i>	03/16/2015
Future directions in galaxy cluster surveys, Paris <i>Dependence of the density profiles of halos on their mass accretion rate</i>	06/25/2014
Fifty-One Erg Conference, Raleigh NC <i>Comparing the light curves of simulated Type Ia Supernovae with observations</i>	05/13/2013
Santa Fe Cosmology Workshop, Santa Fe NM <i>The pseudo-evolution of halo mass</i>	07/12/2012
Great Lakes Cosmology Workshop, Chicago IL <i>Confronting simulations and observations of Type Ia Supernovae</i>	06/15/2010