

Curriculum Vitae - Hanno Rein

Associate Professor
University of Toronto Scarborough

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Academic History

University of Toronto, Scarborough

2018 - now Associate Professor
Department of Environmental and Physical Sciences
Cross-appointed at:
University of Toronto, Department of Astronomy and Astrophysics
University of Toronto, Department of Physics

2017 - now Director, Centre for Planetary Sciences

2013 - 2018 Assistant Professor
Department of Environmental and Physical Sciences

Institute for Advanced Study, Princeton, NJ

2010 - 2013 Postdoc, long term member at the School of Natural Sciences

University of Cambridge, UK

2007 - 2010 PhD in Theoretical Astrophysics
Department of Applied Mathematics and Theoretical Physics
Title: The effects of stochastic forces on the evolution of planetary systems and Saturn's rings
Supervisor: Prof. John C. B. Papaloizou

University of Cambridge, UK

2006 - 2007 MAST, Master of Advanced Study, Part III of the Mathematical Tripos
grade: with distinction

University of Tübingen, Germany

2003 - 2006 Field of Study: Physics and Mathematics
grade: sehr gut (highest possible grade)

Honours, Prizes and Awards

- 2016 Dean's Special Merit Award
- 2014 Connaught New Researcher Award
- 2009 Smith-Knight & Rayleigh-Knight Prize Class II
- 2007 Baylis Scholarship (St. John's College)
- 2007 STFC Research Studentship
- 2007 Isaac Newton Studentship
- 2003 Jugend forscht special award
- 2003 Ferry Porsche Preis for outstanding achievements in Mathematics and Physics
- 2003 Deutsche Physikalische Gesellschaft (DPG) Book Award

Research and Other Grants Obtained

- 2017 Teaching Grant - Internet of Things (\$2k, 1 year)
- 2017 UTSC Working Group Fund (\$3.5k, 1 year)
- 2017 Canada 150th Fund (\$10k, 1 year)
- 2015 UTSC 50th Anniversary Fund Award (\$5k, 1 year)
- 2014 NSERC Discovery Grant (\$120k over 5 years)
- 2014 Connaught New Researcher Award (\$10k over 3 years)
- 2013 UofT Startup Fund (\$100k)
- 2012 Royal Astronomical Society Grant, Exoplanet Smartphone App, (\$5k, 1 year)
- 2012 Hubble Space Telescope Cycle 20 Grant, The Master Lens Database (Co-PI)
- 2012 NASA Grant with Eugene Chiang, ROSES-2011 (Co-PI)

Talks and Presentations

- 2018 Perimeter Institute (Waterloo, Ontario), **invited** talk
Numerical challenges in long-term simulations of planetary systems
- 2017 Queens University (Ontario), **invited** talk (colloquium)
Exploring Long-term Stability of Planetary Systems with New Numerical Tools
- 2017 Northwestern University (Chicago), **invited** talk
Exploring Long-term Stability of Planetary Systems with New Numerical Tools
- 2017 University of Las Vegas (Nevada), **invited** talk (colloquium)
Exploring Long-term Stability of Planetary Systems with New Numerical Tools
- 2017 Numerical Integration Methods in Planetary Sciences, Toronto,
Reproducible Integrations with the Simulation Archive
- 2017 Numerical Integration Methods in Planetary Sciences, Toronto,
Time reversible integrations with Janus
- 2017 Aspen Center for Physics, Aspen
Exploring Long-term Stability of Planetary Systems with New Numerical Tools
- 2016 McMaster University, Hamilton, **invited** lecture,
An inconvenient truth about biosignatures on Earth-like exoplanets

- 2016 University of Western Ontario, London, **invited** talk,
Colloquium, Long term stability of the Solar System
- 2016 Yale University, New Haven, **invited** talk,
Colloquium, Long term integrations of the Solar System
- 2015 McMaster University, Hamilton, **invited** lecture,
iSci Lecture Current research in exoplanets
- 2015 University of Montreal, Astrophysics (Montreal, Canada), **invited** talk (colloquium),
(Non)-Symplectic Integrations of the Solar System
- 2015 University of Toronto, Numerical Analysis Seminar (Toronto, Canada), **invited** talk,
(Non)-Symplectic Integrations of the Solar System
- 2015 University of Toronto, Mississauga (Toronto, Canada), **invited** talk,
An inconvenient truth about biosignatures on Earth-like exoplanets
- 2014 University of Toronto, Planet and Star Formation (Toronto, Canada)
Hands-on session with REBOUND and IAS15
- 2014 Institute for Advanced Study, AMIAS (Princeton), **invited** talk
Biosignatures on Earth-like exoplanets
- 2014 International Space University (Montreal, Canada), **invited** lecture
Biosignatures on Earth-like exoplanets
- 2014 Cornell University Astrophysics Colloquium (Ithaca, New York), **invited** talk,
An inconvenient truth about biosignatures on Earth-like exoplanets
- 2014 University of Toronto, Planet and Star Formation (Toronto, Canada)
An inconvenient truth about biosignatures on Earth-like exoplanets
- 2013 Large-Scale Simulations of Planetary Systems (Kobe, Japan)
Open Source in Astrophysics
- 2013 Large-Scale Simulations of Planetary Systems (Kobe, Japan)
The case for stochastic orbital migration
- 2013 University of Toronto, St George (Toronto, Canada), **invited** job talk,
1) The case for stochastic orbital migration 2) Open Exoplanet Catalogue
- 2013 University of Toronto, Scarborough (Toronto, Canada), **invited** job talk,
Multi-planetary systems
- 2013 Canadian Institute for Theoretical Astrophysics (Toronto, Canada), **invited** talk,
The case for stochastic orbital migration
- 2013 University of Tuebingen (Tuebingen, Germany), **invited** talk,
Junior Group Leader Selection Symposium - Formation of multiplanetary systems
- 2013 Niels Bohr Institute (Copenhagen, Denmark), **invited** talk,
1) Formation of multiplanetary systems 2) Open Exoplanet Catalogue
- 2013 Exoplanets in Multi-body Systems in the Kepler Era (Aspen, CO)
One at a time or all at once: Simulating the formation of Kepler systems
Open Exoplanet Catalogue
- 2012 NASA Jet Propulsion Laboratory (Pasadena, CA), **invited** talk,
Formation of multi-planetary systems - success and failure of planetary migration
theory
- 2012 Cornell University (Ithaca, NY), **invited** talk,
How to get a particle simulation running on your computer in 30 seconds. (+Science)
- 2012 Northwestern University (Chicago), **invited** talk,
Multi-planetary systems, Saturn's Rings and the collisional N-body code REBOUND
- 2012 Center for Planetary Science (Kobe, Japan), **invited** talk,
The collisional N-body code REBOUND and three applications to Saturn's Rings

- 2012 Tokyo Institute of Technology (Tokyo, Japan), **invited** talk,
Multi-planetary systems, Saturn's Rings and the N-body code REBOUND
- 2012 National Astronomical Observatory of Japan (Tokyo, Japan), **invited** talk,
The collisional N-body code REBOUND, Informal discussion
- 2012 National Astronomical Observatory of Japan (Tokyo, Japan), **invited** talk,
Formation of resonant Multi-planetary systems
- 2012 CEA Saclay (Paris, France), **invited** talk,
Multi-planetary systems, Saturn's Rings and the N-body code REBOUND
- 2012 NASA Goddard Space Flight Center (Greenbelt, MD), **invited** talk,
Multi-planetary systems, Saturn's Rings and the collisional N-body code REBOUND
- 2011 McGill University (Montreal, Canada), **invited** talk,
Multi-planetary systems, Saturn's Rings and the N-body code REBOUND
- 2011 University of Rochester (New York), **invited** talk,
Multi-planetary systems, Saturn's Rings and the collisional N-body code REBOUND
- 2011 University of Florida (Gainesville), **invited** talk,
Multi-planetary systems, moonlets in Saturn's Rings and REBOUND
- 2011 Space Telescope Science Institute (STScI, Baltimore), **invited** talk,
Dynamical evolution of multi-planetary systems and moonlets in Saturn's Rings
- 2011 ISIMA Seminars, KIAA (Beijing, China)
Migration of moonlets in Saturn's Rings + Bonus: symplectic integrators
- 2011 ISIMA Conference, KIAA (Beijing, China)
Exoplanets, migration, turbulence, resonances and inclined orbits
- 2010 American Museum of Natural History (New York), **invited** talk,
The effects of stochastic forces on planetary systems and Saturn's rings
- 2010 MPIA (Heidelberg, Germany), **invited** talk,
The effects of stochastic forces on planetary systems and Saturn's rings
- 2010 Evolving Theory for Planet Formation (Ishigaki, Okinawa, Japan)
Stochastic migration in Saturn's rings
- 2010 Informal Astrophysical Seminar (Institute for Advanced Study, Princeton), **invited** talk,
Multi-planetary systems, turbulence and Saturn's Rings
- 2010 Astrophysical Lunch Seminar (Cambridge, England)
Multi-planetary systems, turbulence and Saturn's Rings
- 2009 Dynamics of Discs and Planets: Isaac Newton Institute (Cambridge, England)
On the Validity of the Super-Particle Approximation of Planetesimals in Simulations of
Gravitational Collapse
- 2009 DAMTP Fluids Seminar (Cambridge England)
From Dust to Planets
- 2009 Exoplanets and Disks: Their Formation and Diversity (Keauhou, Hawaii)
On the Formation of Multi-planetary Systems in Turbulent Disks
- 2009 Planet Formation and Evolution (Tuebingen, Germany)
On the Formation of Multi-planetary Systems in Turbulent Disks
- 2008 Astrophysical Lunch Seminar (Cambridge, England)
Turbulence and Mean Motion Resonances

Interviews and Media Relations

In the last 5 years, my work was covered in the following media outlets:

Washington Post, New York Times, BBC, CBC, Scientific American, ScienceMag, Global News, Huffington Post, CNET, I Fucking Love Science, Slashdot, io9, ars technica, heise.de, The Register, Der Standard, Phys.org, ru-universe, Daily Galaxy, The Conversation, Spaceref.com, Futurity, The Hindu, Odisha Sun Times, Science World Report, India.com, Grenzwissenschaft Aktuell, Europa Press, Astro Arts, Astro News, Scientias.nl, ABC.es, International Business Times, Malaysia Sun, WattsUpWithThat, Big News Network, Unified Republic of Stars, Surfingbird.ru, Elementy.ru, Prensa Latina, Nature World News, Nu.nl, Aninews.in.

Press releases since 2014:

- Alien asteroid that recently flew past Earth likely came from a system with two stars (March 2018)
<https://utsc.utoronto.ca/news-events/breaking-research/alien-asteroid-recently-flew-past-earth-likely-came-system-two-stars>
- That Tesla shot into space will likely collide with Earth or Venus - just not any time soon (February 2018)
<https://utsc.utoronto.ca/news-events/breaking-research/tesla-shot-space-will-likely-collide-earth-or-venus-just-not-any-time-soon>
- New CPS director eager to continue exploring the cosmos through research and outreach (September 2017)
<http://utsc.utoronto.ca/news-events/breaking-research/new-cps-director-eager-continue-exploring-cosmos-through-research-and-outreach>
- Conference brings international group of astrophysicists to U of T Scarborough (August 2017)
<http://ose.utsc.utoronto.ca/ose/story.php?id=9689>
- Scale model solar system at U of T Scarborough could soon be one of world's largest (August 2017)
<http://ose.utsc.utoronto.ca/ose/story.php?id=9646>
- Explore the galaxy with U of T Scarborough's Solar Walk event this long weekend (July 2017)
<http://ose.utsc.utoronto.ca/ose/story.php?id=9547>
- UTSC Observatory joins network of meteor hunters in southern Ontario (February 2017)
<http://ose.utsc.utoronto.ca/ose/story.php?id=9237>
- A faster, more accurate tool to calculate the motions of planets (November 2015)
<http://ose.utsc.utoronto.ca/ose/story.php?id=7858>
- Lunar Eclipse Live at UTSC (September 2015)
<http://ose.utsc.utoronto.ca/ose/story.php?id=7584>
- Search for life on exoplanets more difficult than thought (April 2014)
<http://ose.utsc.utoronto.ca/ose/story.php?id=6079>

Teaching

Graduate courses taught:

Planet Formation (UofT, AST3020)
Galactic Dynamics (UofT, AST1420)

Undergraduate courses taught:

Mechanics: From Oscillations to Chaos (UTSC, PHYB54)
Quantum Mechanics I (UTSC, PHYC56)
Introduction to Scientific Computing (UTSC, PSCB57)
Practical Astronomy: Instrumentation and Data Analysis (UTSC, ASTC02)

Postdoc and Student Supervision

Postdoctoral Fellows Supervised (1+3)

Directly supervised/working with:

Dan Tamayo

September 2014-now

Currently postdoc at CITA & CPS, UofT

Since September 2017, in my capacity as the CPS director, I am formally the supervisor for all Centre For Planetary Sciences Postdocs. I am mainly working with Dan Tamayo, but I have listed all CPS postdocs below, even though I am not directly working with them on scientific projects at this time.

Mohamad Ali-Dib

September 2017 - now

Currently postdoc at CPS

Alan Jackson

September 2017 - now

Currently postdoc at CPS

Noah Hammond

September 2017 - now

Currently postdoc at CPS

PhD Students Supervised (3)

Ari Silburt

Thesis Topic: Statistics, Formation and Stability of Exoplanetary Systems

January 2014 - August 2017

Currently Eberly Postdoctoral Fellowship at PSU

Rejean Leblanc

Thesis Topic: Modelling Radial Velocity and Transit Timing Variation with MCMC

January 2017 - ongoing

Currently PhD student at UofT

Garett Brown

Thesis Topic: Orbit reconstruction using Chebyshev polynomials

September 2017 - ongoing

Currently PhD student at UofT

Master's Students Supervised (5)

Rejean Leblanc

Thesis Topic: MCMC Bechmarks
September 2015 - December 2016
Currently PhD student at UofT

Natasha Urbancic

Thesis Topic: MEGNO as a New Technique to Assess Stability in Multi-Planet Systems
February 2015 - August 2015
Currently PhD student at the University of British Columbia

Trevor Vincent

Thesis Topic: OCCLUDE: An OpenCL N-body code for collisional dynamics
May 2014 - August 2014
Currently PhD student at UofT

Aleksandar Rachkov

Thesis Topic: Collisional Dynamics in Saturn's Rings and Long Term Evolution of the Solar System
August 2014 - August 2017
Left academia, now data analyst

Graduate Students Co-Supervised (3)

Bryce Bolin

Topic: Gravitational Instability in a Planetesimal Disk
July 2014 - December 2014
Currently at Observatoire de la Cote d'Azur, Nice, CNRS

Erika Nesvold

Topic: SMACK, A New Algorithm for Modelling Collisions and Dynamics of Planetesimals in Debris Disks
Currently a postdoctoral fellow at the Carnegie Institution Department of Terrestrial Magnetism

Shangfei-Liu

Topic: REBOUND, a new collisional N-body code
July 2011 - June 2014
Currently Postdoctoral Fellow at Rice University

Undergraduate Student Supervised (16)

Farasha Meem

Topic: Convergent Migration in Kepler Systems
December 2017 - April 2018
Currently undergraduate student at UofT

Vismay Shah

Topic: Optimization Methods for Orbital Dynamics
August 2016 - March 2017
Currently a graduate student at McMaster

Chin Chen

Topic: Finding Optimal Trajectories for Voyager 1 and 2
August 2016 - December 2016

Hemani Kalucha

Topic: Optimization Methods for Orbital Dynamics
June 2016 - August 2016
Currently undergraduate student at Princeton University

Ekin Ozturk

Topic: Second order variational equations and chaotic systems
January 2016 - August 2017
Currently Master's Student at Queen Mary London

Jasmeer Sangha

Topic: Symplectic versus non-symplectic integrators in chaotic systems
August 2015 - May 2016

Jade Checlair

Topic: Stability of Circumbinary Planetary Systems
January 2016 - May 2016

Alice Chen

Topic: Overstability in Exoplanets
April 2015 - August 2015
Currently undergraduate student at UofT

Pengshuai Shi

Topic: General relativistic corrections in N-body simulations
January 2015 - May 2016

Patrick Fraser

Topic: Reproducing Photometric Observations of Moonlets
September 2015 - April 2015
Currently Senior Analyst, Risk Management at Scotia Capital

Taylor Esch

Topic: Dark Matter in Globular Clusters
January 2014 - April 2015

Sunny-Sum Chen

Topic: The MEGNO Chaos Indicator
September 2014 - March 2015

Srivathsan Morkonda Gnanasekaran

Topic: Dynamics of moonlets in non-uniform rings
April 2014 - September 2014
Currently Data Analyst at ESG Solutions

Qunxing Xue

Topic: Formation of resonant planetary system
Mat 2014 - September 2014

Eric Dapp

Topic: Computer interface for UTSC telescope
September 2014 - December 2014

Caden Armstrong

Topic 1: Open Exoplanet Catalogue
Topic 2: Kepler Light Curve Analysis
Topic 3: Exo-Saturn transit model
April 2014 - May 2016
Currently working at UofT Library

Committees and Organizations

University of Toronto

Department of Physical and Environmental Sciences

- Teaching Committee (2014 - now)
- PTR Committee (2014, 2015, 2018)
- Research Committee (2015 - now)
- Outreach Committee (2016 - now)

Department of Astronomy and Astrophysics

- Graduate Admissions Committee (2014, 2015, 2018)
- PhD committee member for students other than my own (2016, 2017, 2018)

Department of Physics

- Master's Committee (2015, 2018)
- PhD committee member for students other than my own (2015, 2016, 2017, 2018)

Centre for Planetary Sciences

- Postdoc Selection Committee (2014)
- Director (2017 - now)

Other Departments

- Chemistry PhD Committee Chair (2016)

Outside Committees and Organizations

City of Toronto

- Open Data Advisory Group (2017)

Member of the Royal Astronomical Society (2007 - 2017)

List of Publications- Hanno Rein

Refereed Book Chapters

- 2017 Moonlets in Dense Planetary Rings
Frank Spahn, Holger Hoffmann, Hanno Rein, Martin Seiss, Miodrag Sremvcevic, Matthew S. Tiscareno, book chapter, Cambridge University Press, edited by Matthew S. Tiscareno and Carl D. Murray
- 2017 Planetary rings and other astrophysical disks
Henrik N. Latter, Gordon I. Ogilvie, Hanno Rein, book chapter, Cambridge University Press, edited by Matthew S. Tiscareno and Carl D. Murray

Refereed Research Articles

People under my supervision are highlighted with bold typeface. My own supervisors and mentors are highlighted with an underline.

- 2018 Dimensionality and integrals of motion of the Trappist-1 planetary system
Johannes Floss, Hanno Rein, Paul Brumer — MNRAS Volume 477, Issue 4, 11 July 2018, Pages 4874–4878
- 2018 The random walk of cars and their collision probabilities with planets
Hanno Rein, **Daniel Tamayo**, David Vokrouhlicky — Aerospace (Special Issue Space Debris: Impact and Remediation) 2018, 5(2), 57
- 2018 Ejection of rocky and icy material from binary star systems: Implications for the origin and composition of 1I/Oumuamua
Alan Jackson, **Daniel Tamayo**, Noah Hammond, Mohamad Ali-Dib, Hanno Rein — MNRAS Letters, Volume 478, Issue 1, 21 July 2018, Pages L49–L53
- 2018 JANUS: A bit-wise reversible N-body integrator
Hanno Rein, **Daniel Tamayo**, — MNRAS Volume 473, Issue 3, 21 January 2018, Pages 3351–3357
- 2017 Resonant structure, formation and stability of the planetary system HD155358
Ari Silburt, Hanno Rein, MNRAS Volume 469, Issue 4, p.4613-4619
- 2017 Convergent Migration Renders TRAPPIST-1 Long-lived
Daniel Tamayo, Hanno Rein, Cristobal Petrovich, Norman Murray, ApJ Letters, Volume 840, Issue 2, article id. L19, 6 pp, **Citations: 3**
- 2017 Connecting HL Tau to the Observed Exoplanet Sample
Christopher Simbulan, **Daniel Tamayo**, Cristobal Petrovich, Hanno Rein, Norman Murray, MNRAS, Volume 469, Issue 3, p.3337-3346
- 2016 A new paradigm for N-body simulations: exact reproducibility
Hanno Rein, **Daniel Tamayo**, MNRAS Volume 467 (2), pages 2377-2383, **Citations: 3**
- 2016 A machine learns to predict the stability of tightly packed planetary systems
Daniel Tamayo, **Ari Silburt**, Diana Valencia, Kristen Menou, Mohamad Ali-Dib, Cristobal Petrovich, Chelsea X. Huang, Hanno Rein, Christa van Laerhoven, Adiv Paradise, Alysa Obertas, Norman Murray, The Astrophysical Journal Letters, Volume 832, Issue 2, article id. L22, 5 pp. (2016), **Citations: 3**
- 2016 Second-order variational equations for N-body simulations
Hanno Rein, **Daniel Tamayo** – MNRAS, Volume 459, Issue 3, p.2275-2285

- 2015 Tides Alone Cannot Explain Kepler Planets Close to 2:1 MMR
Ari Silburt, Hanno Rein – MNRAS Volume 453, Issue 4, p.4089-4096, **Citations: 2**
- 2015 High order harmonics in light curves of Kepler planets
Caden Armstrong, Hanno Rein – MNRAS Letters Volume 453, Issue 1, p.L98-L102, **Citations: 1**
- 2015 WHFast: A fast and unbiased implementation of a symplectic Wisdom-Holman integrator for long term gravitational simulations
Hanno Rein, **Daniel Tamayo** – MNRAS Volume 452, Issue 1, p.376-388, **Citations: 25**
- 2015 Dynamical Stability of Imaged Planetary Systems in Formation: Application to HL Tau
Daniel Tamayo, Amaury H. M. J. Triaud, Kristen Menou, Hanno Rein
Astrophysical Journal, Volume 804, Issue 1, **Citations: 27**
- 2015 Reanalysis of radial velocity data from the resonant planetary system HD128311
Hanno Rein – MNRAS Letters Volume 448, Issue 1, p.L58-L61, **Citations: 5**
- 2015 IAS15: A fast, adaptive, high-order integrator for gravitational dynamics, accurate to machine precision over a billion orbits
Hanno Rein, David S. Spiegel – MNRAS Volume 446, Issue 2, 1424-1437, **Citations: 34**
- 2014 Some inconvenient truths about ‘biosignatures’ involving two chemical species on Earth-like exoplanets
Hanno Rein, Yuka Fujii, David S. Spiegel
PNAS (Proceedings of the National Academy of Sciences), **Citations: 7**
Volume 111, Issue 19, 6871-6875
- 2013 SMACK: A New Algorithm for Modeling Collisions and Dynamics of Planetesimals in Debris Disks
Erika Nesvold, Marc Kuchner, Hanno Rein
Astrophysical Journal, Volume 777, Issue 2, Article 144, **Citations: 22**
- 2013 The formation of systems with closely spaced low-mass planets and the application to Kepler-36
Sijme-Jan Paardekooper, Hanno Rein, Willy Kley
MNRAS Volume 434, Issue 4, 3018-3029, **Citations: 16**
- 2012 Large-scale N-body simulations of the viscous overstability in Saturn’s rings
Hanno Rein, Henrik Latter - MNRAS Volume 431, Issue 1, 145-158, **Citations: 7**
- 2012 Period ratios in multi-planetary systems discovered by Kepler are consistent with planet migration
Hanno Rein - MNRAS Volume 427, Issue 1, L21-L24, **Citations: 58**
- 2012 Stochastic Flights of Propellers
Margaret Pan, Hanno Rein, Eugene Chiang, Steven Evand
MNRAS Volume 427, Issue 4, 2788-2796, **Citations: 4**
- 2012 Traditional formation scenarios fail to explain 4:3 mean motion resonances
Hanno Rein, Matthew Payne, Dimitri Veras, Eric Ford, **Citations: 22**
MNRAS Volume 426, Issue 1, 187-202
- 2012 The gravitational instability of a stream of co-orbital particles
Henrik Latter, Hanno Rein, Gordon Ogilvie
MNRAS Volume 423, Issue 2, 1267-1276, **Citations: 1**
- 2012 REBOUND: An open-source multi-purpose N-body code for collisional dynamics
Hanno Rein, **Shangfei Liu** - A&A 537, A128, **Citations: 64**
- 2012 Planet-disk interaction in highly inclined systems
Hanno Rein - MNRAS Volume 422, Issue 4, 3611-3613, **Citations: 16**

- 2011 Symplectic integrators for the shearing sheet
Hanno Rein, Scott Tremaine - MNRAS Volume 415, Issue 4, 3168-3176, **Citations: 9**
- 2010 Stochastic orbital migration of small bodies in Saturn's rings
Hanno Rein, John C. B. Papaloizou - A&A 524, A11 (cover image), **Citations: 14**
- 2010 Migration of a moonlet in a ring of solid particles: Theory and application to Saturn's propellers
Aurelien Crida, John C. B. Papaloizou, Hanno Rein, Sebastien Charnoz, Julien Salmon
The Astronomical Journal 140, 944-953, **Citations: 15**
- 2010 The Validity of the Super-Particle Approximation during Planetesimal Formation
Hanno Rein, Geoffroy Lesur, Zoe M. Leinhardt - A&A 511, A69, **Citations: 13**
- 2010 The Dynamical Origin of the Multi-Planetary System HD45364
Hanno Rein, John C. B. Papaloizou, Wilhelm Kley - A&A 510 A4, highlighted paper, **Citations: 21**
- 2009 On the evolution of mean motion resonances through stochastic forcing: Fast and slow libration modes and the origin of HD128311
Hanno Rein, John C. B. Papaloizou - A&A 497, 595-609, **Citations: 50**
- 2009 Formation of Multi-Planetary Systems in Turbulent Disks,
Hanno Rein, John C. B. Papaloizou - AIP Conference Proceedings 1158, 55, 10.1063/1.3215915

Other Non-refereed publications

- 2012 A proposal for community driven and decentralized astronomical databases and the Open Exoplanet Catalogue
Hanno Rein, white-paper, not reviewed, available at <http://arxiv.org/abs/1211.7121>, **Citations: 19**
- 2015 How Open-Source Ideas Can Help Us Study Exoplanets,
Hanno Rein, IAS The Institute Letter Summer 2015