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February 2017

EDUCATION/POSITIONS

Postdoc Positions Sep. 2017 – present, Postdoc, Heidelberg Institute for Theoretical Studies, Heidelberg, Germany

Apr. 2012 – Aug. 2016, Postdoc, Max Planck Institut für Astrophysik, Garching, Germany

Doctoral Studies

May 2011 – Mar. 2012, PhD position, Hamburger Sternwarte, Germany

Dec. 2010 – Apr. 2011, PhD position, University of Heidelberg, Germany

Apr. 2010 – Nov. 2010, CONSTELLATION fellowship, Cardiff University, Cardiff, UK

Jan. 2009 – Mar. 2010, PhD position at University of Heidelberg, Germany

Undergraduate and Graduate Studies

Aug. 2007 – Dec. 2008, Study of physics (Diplom/M. Sc.), Michigan State University, Lansing, USA

Apr. 2003 – Aug. 2007, Study of physics (Diplom), University of Heidelberg, Germany

Civilian Service

May 2002 - Mar. 2003, Rheinessen Fachklinik (Neuropathic hospital / Psychiatric clinic), Alzey, Germany

School Education

Sep. 1993 – Mar. 2002, High school, Gymnasium am Römerkastell, Alzey, Germany

RESEARCH INTERESTS

- Dynamical impact of cosmic rays in the interstellar medium
- Supernova feedback in molecular clouds
- Impact of magnetic fields on gravo-turbulent dynamics
- Numerical simulations of turbulence
- Formation of self-gravitating structures
- Present-day star formation

PUBLICATIONS

Peters, Thomas; **Girichidis, Philipp**; Gatto, Andrea; Naab, Thorsten; Walch, Stefanie; Wunsch, Richard; Glover, Simon C. O.; Clark, Paul C.; Klessen, Ralf S.; Baczynski, Christian (eprint arXiv:1510.06563)

Impact of supernova and cosmic-ray driving on the surface brightness of the galactic halo in soft X-rays

Girichidis, Philipp; Naab, Thorsten; Walch, Stefanie; Hanasz, Michal; Mac Low, Mordecai-Mark; Ostriker, Jeremiah P.; Gatto, Andrea; Peters, Thomas; Wunsch, Richard; Glover, Simon C. O.; Klessen, Ralf S.; Clark, Paul C.; Baczynski, Christian (eprint arXiv:1509.07247)

Launching cosmic ray-driven outflows from the magnetized interstellar medium

Girichidis, Philipp; Walch, Stefanie; Naab, Thorsten; Gatto, Andrea; Wunsch, Richard; Glover, Simon C. O.; Klessen, Ralf S.; Clark, Paul C.; Peters, Thomas; Derigs, Dominik; Baczynski, Christian (eprint arXiv:1508.06646)

The SILCC project - II. Dynamical evolution of the supernova-driven ISM and the launching of outflows

Walch, S.; **Girichidis, P.**; Naab, T.; Gatto, A.; Glover, S. C. O.; Wunsch, R.; Klessen, R. S.; Clark, P. C.; Peters, T.; Derigs, D.; Baczynski, C. (2015, MNRAS, 454, 238):

The SILCC project - I. Chemical evolution of the supernova-driven ISM

Schneider, N.; Bontemps, S.; **Girichidis, P.**; Rayner, T.; Motte, F.; Andre, P.; Russeil, D.; Abergel, A.; Anderson, L.; Arzoumanian, D.; Benedettini, M.; Csengeri, T.; Didelon, P.; Francesco, J. D.; Griffin, M.; Hill, T.; Klessen, R. S.; Ossenkopf, V.; Pezzuto, S.; Rivera-Ingraham, A.; Spinoglio, L.; Tremblin, P.; Zavagno, A. (eprint arXiv:1507.08869):

Detection of two power-law tails in the probability distribution functions of massive GMCs

Konstandin, Lukas; Schmidt, Wolfram; **Girichidis, Philipp**; Peters, Thomas; Shetty, Rahul; Klessen, Ralf S. (eprint arXiv:1506.03834):

Mach number study of supersonic turbulence: The properties of the density field

Gatto, A.; Walch, S.; Low, M.-M. Mac; Naab, T.; **Girichidis, P.**; Glover, S. C. O.; Wunsch, R.; Klessen, R. S.; Clark, P. C.; Baczynski, C.; Peters, T.; Ostriker, J. P.; Ibáñez-Mejía, J. C.; Haid, S. (2015, MNRAS, 449, 1057):

Modelling the supernova-driven ISM in different environments

Schneider, N.; Ossenkopf, V.; Csengeri, T.; Klessen, R.; Federrath, C.; Tremblin, P.; **Girichidis, P.**; Bontemps, S.; Andre, Ph. (2015, A&A, 575, 79):

Understanding star formation in molecular clouds I. Effects of line-of-sight contamination on the column density structure?

Boneberg, Dominika M.; Dale, James E.; **Girichidis, Philipp**; Ercolano, Barbara (2015, MNRAS, 447, 1341):

Turbulence in giant molecular clouds: the effect of photoionization feedback

Konstandin, Lukas; Shetty, Rahul; **Girichidis, Philipp**; Klessen, Ralf S. (2015, MNRAS, 446, 1775):

Hierarchical Bayesian analysis of the velocity power spectrum in supersonic turbulence

Girichidis, Philipp; Naab, Thorsten; Walch, Stefanie; Hanasz, Michal (MNRAS submitted):

Anisotropic transport and early dynamical impact of Cosmic Rays around Supernova remnants

Girichidis, P.; Konstandin, Lukas; Whitworth, Anthony P.; Klessen, Ralf S. (2014, ApJ 781, 91):

On the Evolution of the Density Probability Density Function in Strongly Self-gravitating Systems

Konstandin, L.; **Girichidis, P.**; Federrath, C.; Klessen, R. S. (2012, ApJ 761, 149):

A new density variance–Mach number relation for subsonic and supersonic, isothermal turbulence

Girichidis, P.; Federrath, C.; Allison, R.; Banerjee, R.; Klessen, R. S. (2012, MNRAS 420, 3264):
Importance of the initial conditions for star formation - III. Statistical properties of embedded protostellar clusters

Girichidis, P.; Federrath, C.; Banerjee, R.; Klessen, R. S.: (2012, MNRAS 420, 613):
Importance of the initial conditions for star formation - II. Fragmentation induced starvation and accretion shielding

Walch, S.; Whitworth, A. P.; **Girichidis, P.:** (2012, MNRAS 419, 760):
The influence of the turbulent perturbation scale on pre-stellar core fragmentation and disc formation

Girichidis, P.; Federrath, C.; Banerjee, R.; Klessen, R. S. (2011, MNRAS 413, 2741):
Importance of the initial conditions for star formation - I. Cloud evolution and morphology

INVITED TALKS

Stellar Aggregates over Mass and Spatial Scales, Bad Honnef, Germany, December 2016
Importance of the initial conditions for star and star cluster formation

Cosmidyn, Montpellier, France, December 2016
Cosmic ray-driven outflow from the ISM

MPA-UWC meeting, Stellenbosch, South Africa, November 2016
How CRs help driving outflows

SFB talk Cologne, Cologne, Germany, June 2016
Dynamical impact of CRs in the ISM and the launching of outflows

ASTRONUM, Monterey, California, USA, June 2016
Dynamical impact of CRs in the ISM and the launching of outflows

Computational Galaxy Formation, Ringberg, Germany, May 2016
Dynamical impact of CRs in the ISM and the launching of outflows

Hamburger Sternwarte, Hamburg, Germany, November 2014
Dynamical impact of cosmic rays on the ISM and Galactic Outflows

KAVLI Institute, Santa Barbara, California, USA, July 2014
Cosmic Ray Diffusion around SN remnants

Gas and Stars in Galaxies, Ringberg, Germany, May 2014
Dynamical impact of cosmic rays on the ISM and Galactic Outflows

Annual Meeting of DFG Research Unit FOR 1254, Rügheim, Germany, October 2013
Effect of cosmic rays on the ISM and galaxy evolution

University of Sofia, Sofia, Bulgaria, October 2011
Oct. 4: Key aspects of present-day star formation
Oct. 5: Star formation now and in the early universe
Oct. 6: Numerical techniques in computational astrophysics

Hamburger Sternwarte, Hamburg, Germany, June 2011
Importance of the Initial Conditions for Star Formation

CONFERENCES & WORKSHOPS

Shocks2016, Torun, Poland, September 2016
Talk: Shock structure of the multiphase ISM in Cosmic-Ray-MHD simulations

Local Gas conference, ASTRON, Dwingeloo, Netherlands, August 2015

Talk: Chemical and dynamical evolution of the SN-driven ISM and the launching of outflows

Star Formation History of the Universe, Munich Institute for Astro- and Particle Physics (MIAPP), Garching, Germany, August 2015

Talk: The impact of cosmic rays on the ISM and outflows

Kavli Institute, The Physics of Star Formation Feedback, Santa Barbara, USA, July 2014

Talk: Dynamical impact of cosmic rays on the ISM

The Olympian Symposium on Star Formation, Katerini, Greece, May 2014

Talk: Dynamical impact of cosmic rays on the ISM

Physical processes in the ISM, Garching, Germany, October 2013

Talk: CRs in the ISM and the evolution of CR spectra

The Labyrinth of Star Formation, Krete, Greece, June 2012

Talk: Impact of small-scale tangled magnetic fields on star formation

Turbulence in Cosmic Structure Formation, Tempe, Arizona, USA, March 2012

Poster: Impact of small-scale tangled magnetic fields on star formation

Annual Meeting of the Astronomische Gesellschaft, Heidelberg, Germany, September 2011

Talk: Energetics, Substructure and Mass Segregation in Dense Clusters

Magnetic Fields in the Universe III, Zakopane, Poland, August 2011

Poster: Importance of the initial conditions for star formation

Advances in Computational Astrophysics, Cefalu, Italy, June 2011

Talk: Importance of the initial conditions for star formation

CONSTELLATION EC FP6: Origin of Stellar Masses, Tenerife, Spain, October 2010

Poster: Accretion Processes in Dense Clusters

Zeus et al., Symposium on Numerical Star Formation, Katerini, Greece, July 2010

Talk: Numerical Simulations of Gravo-turbulent Collapse

IAUS 270, Computational Star Formation, Barcelona, Spain, May 2010

Poster: Importance of the Initial Conditions for Star Formation

Seminar on SPH and AMR Simulations of Astrophysical Processes, Obergurgl, Austria, May 2010

Talk: Gravoturbulent Fragmentation with FLASH

CONSTELLATION WP2, Prague, Czech Republic, September 2009

Poster: Gravoturbulent fragmentation in dense cores

SUPERVISION

2013 - 2017: Anabele Pardi, PhD student

2016: Mattia Straccia, Master student

2015: Adrian Bittner, Bachelor student

2014: Alexander Nieddu, practical semester

2014: Marco Michel, Bachelor student

2014: Franziska Schmidt, practical semester

2013: Sebastian Hutschenreuter, Bachelor student

TEACHING

2016: Lecture *Practical course in hydrodynamical simulations*, summer school: The ISM-SPP Olympian School of Astrophysics 2016

2010: Tutorial in numerical mathematics

2009: Tutorial in computational physics

2005 - 2006: Introduction to Sequences and Series for students in mathematics

2004 - 2007: Introduction to Complex Numbers for students in mathematics

COMMITTEES

Postdoc Representative

- 2014 - 2016: Postdoc representative at MPA

General Student Representative

- 2006 - 2007: Chair of General Student Representation (Allgemeiner Studierendenausschuss)

Student Representative in Physics/Mathematics (Fachschaft)

- 2004 - 2007: Member of Fakultätsrat
- 2004 - 2007: Member of Studienkommission
- 2006 - 2007: Member of Gebührenkommission

PROFESSIONAL AFFILIATIONS

Deutsche Physikalische Gesellschaft

SKILLS

Computing

- Programming: FORTRAN, C/C++, Python, php, HTML, MPI, OpenMP
- Software: gnuplot, IDL, Maple, Mathematica
- Cluster Computer: JUGENE, CASPUR, KOLOB, SuperMUC

Language ability

- German, Native speaker
- English, Fluent in spoken and written
- French, Fluent in spoken