

Refereed Articles

1. *Rapid Star Formation and Global Gravitational Collapse*
Hartmann, L., Ballesteros-Paredes, J., **Heitsch, F.** 2001, Monthly Notices of the RAS, *in press*
2. *Modes of Star Formation in Finite Molecular Clouds*
Pon, A., Johnstone, D., **Heitsch, F.** 2011, Astrophys. Journal, 740, 88-97
3. *Complex Structure in Class 0 Protostellar Envelopes II: Kinematic Structure from Single-Dish and Interferometric Molecular Line Mapping*
Tobin, J.-J., Hartmann, L., Chiang, H.-F., (+**Heitsch F.** and 5 co-authors) 2011, Astrophys. Journal, 740, 45-97
4. *Gravity or Turbulence? II. Evolving Column Density PDFs in Molecular Clouds*
Ballesteros-Paredes, J., Vázquez-Semadeni, E., Hartmann, L., Gazol, A., **Heitsch, F.**, Colin, P. 2011, MNRAS, 416, 1436-1442
5. *The Coalsack Near and Far*
Beuther, H., Kainulainen, J., Henning, Th., Plume, R., **Heitsch, F.**, MNRAS, 533, 17-25
6. *Flow-Driven Cloud Formation and Fragmentation: Results from Eulerian and Lagrangian Simulations*
Heitsch, F., Naab, T., Walch S. 2011, MNRAS, 415, 271-278
7. *W43, the Closest Molecular Cloud Complex of the Galactic Bar*
Nguyen Luong, Q., Motte, F., Schuller, F., (+ **Heitsch, F.** and 6 co-authors) 2011, Astronomy & Astrophysics, 529, 41-56
8. *Formation of Cold Filamentary Structure from Wind-Blown Superbubbles*
Ntormousi, E., Burkert, A., Fierlinger, K., **Heitsch, F.** 2011, Astrophys. Journal, 731, 13-28
9. *Physical Properties of Complex C*
Hsu, W.-H., Putman, M., **Heitsch, F.**, Stanimirovic, S., Peek, J.E.G. 2011, AJ, 141, 57
10. *Gravity or Turbulence? The Velocity Dispersion–Size Relation*
Ballesteros-Paredes, J., Hartmann, L.W., Vázquez-Semadeni, E., **Heitsch, F.**, Zamora-Aviles, M.A. 2011, MNRAS, 411, 65-70
11. *Spitzer View of Young Massive Stars in the LMC HII Complex. II. N159*
Chen, C.-H.R., Indebetouw, R., Chu, Y.-H., Gruendl, R.A., Testor, G., **Heitsch, F.**, Seale, J.P., Meixner, M., Sewilo, M. 2010, Astrophys. Journal, 721, 1206-1232
12. *Modelling Shear Flows with Smoothed Particle Hydrodynamics and Grid-Based Methods*
Junk, V., Walch, S., **Heitsch, F.**, Burkert, A., Wetzstein, M. Schartmann, M., Price, D. 2010, Monthly Notices of the RAS, 407, 1933-1945

13. *Competitive Accretion in Sheet Geometry and the Stellar IMF*
Hsu, W.-H., Hartmann, L., **Heitsch, F.**, Gómez, G.C. 2010, *Astrophys. Journal*, 721, 1531-1546
14. *Spitzer and HHT Observations of Starless Cores: Masses and Environments*
Stutz, A.M., Rieke, G.H., Bieging, J.H. et al. (+ **Heitsch, F.** and 5 co-authors) 2009, *Astrophys. Journal*, 707, 137-166
15. *Numerical Star Formation Studies – A Status Report*
Klessen, R.S., Krumholz, M.R., **Heitsch, F.** 2009, *Advanced Science Letters*, *accepted*
16. *Gravitational Collapse and Filament Formation: Comparison with the Pipe Nebula*
Heitsch, F., Ballesteros-Paredes, J., Hartmann, L. 2009, *Astrophys. Journal*, 704, 1735-1742
17. *The Fate of High Velocity Clouds: Warm or Cold Cosmic Rain?*
Heitsch, F., Putman, M.E. 2009, *Astrophys. Journal*, 698, 1485-1496
18. *Spitzer View of Young Massive Stars in the LMC HII Complex N 44*
Chen, C.-H.R., Chu, Y.-H., Gruendl, R., Gordon, K.D., **Heitsch, F.** 2009, *Astrophys. Journal*, 695, 511-541
19. *Effects of Magnetic Field Strength and Orientation on Molecular Cloud Formation*
Heitsch, F., Stone, J.M., Hartmann, L.W. 2009, *Astrophys. Journal*, 695, 248-258
20. *Driving Turbulence and Triggering Star Formation by Ionizing Radiation*
Gritschneder, M., Naab, T., Walch, S., Burkert, A., **Heitsch, F.** 2009, *Astrophys. Journal*, 694, 26-30
21. *iVINE - Ionization in the parallel tree/SPH code VINE: First results on the observed age-spread around O-stars*
Gritschneder, M., Naab, T., Burkert, A., Walch, S., **Heitsch, F.**, Wetzstein, M. 2009, *Monthly Notices of the RAS*, 393, 21-31
22. *Rapid Molecular Cloud and Star Formation: Mechanisms and Movies*
Heitsch, F., Hartmann, L.W. 2008, *Astrophys. Journal*, 689, 290-301
23. *Fast Dynamos in Weakly Ionized Gases*
Zweibel, E.G., **Heitsch, F.** 2008, *Astrophys. Journal*, 684, 373-379
24. *Fragmentation of Shocked Flows: Gravity, Turbulence and Cooling*
Heitsch, F., Hartmann, L.W., Burkert, A. 2008, *Astrophys. Journal*, 683, 786-795

25. *Evolution of Unmagnetized and Magnetized Shear Layers*
Palotti, M., **Heitsch, F.**, Zweibel, E.G., Huang, Y.-M. 2008, *Astrophys. Journal*, 678, 234-244
26. *Cooling, Gravity and Geometry: Flow-Driven Massive Core Formation*
Heitsch, F., Hartmann, L.W., Slyz, A.D., Devriendt, J.E.G., Burkert, A. 2008, *Astrophys. Journal*, 674, 316-328
27. *Magnetized Nonlinear Thin-Shell Instability: Numerical Studies in Two Dimensions*
Heitsch, F., Slyz, A.D., Devriendt, J.E.G., Hartmann, L.W., Burkert, A. 2007, *Astrophys. Journal*, 665, 445-456
28. *The Frequency of Mid-Infrared Excess Sources in Galactic Surveys*
Uzpen, B., Kobulnicky, H.A., Monson, A.J. et al. (+ **Heitsch, F.** and 26 co-authors) 2007, *Astrophys. Journal*, 658, 1264-1288
29. *Structure Generation by Irradiation: What can GLIMPSE teach us about the ISM structure?*
Heitsch, F., Whitney, B.A., Indebetouw, R. et al. (+ 3 co-authors) 2007, *Astrophys. Journal*, 656, 227-241
30. *Cloud Dispersal in Turbulent Flows*
Heitsch, F., Slyz, A.D., Devriendt, J.E.G., Burkert, A. 2006, *Monthly Notices of the RAS*, 373, 1379-1388
31. *Thermal Instability in a Weakly Ionized Plasma*
Stiele, H., Lesch, H., **Heitsch, F.** 2006, *Monthly Notices of the RAS*, 372, 862-868
32. *The Birth of Molecular Clouds: Formation of Atomic Precursors in Colliding Flows*
Heitsch, F., Slyz, A.D., Devriendt, J.E.G., Hartmann, L.W., Burkert, A. 2006, *Astrophys. Journal*, 648, 1052-1065
33. *The Formation of Turbulent Molecular Clouds: A Modeler's View*
Heitsch, F. 2006, *Reviews in Modern Astronomy*, 19, 157-162
34. *Formation of Structure in Molecular Clouds: A Case Study*
Heitsch, F., Burkert, A., Hartmann, L., Slyz, A.D., Devriendt, J.E.G. 2005, *Astrophys. Journal*, 633, 113-116
35. *Identification of Main-Sequence Stars with Mid-Infrared Excess Using GLIMPSE: β Pictoris Analogs?*
Uzpen, B., Kobulnicky, H.A., Olsen, K.A.G. et al. (+ **Heitsch, F.** and 22 co-authors) 2005, *Astrophys. Journal*, 629, 512-525
36. *RCW 49 at Mid-Infrared Wavelengths: A GLIMPSE from the Spitzer Space Telescope*
Churchwell, E., Whitney, B.A., Babler, B.L. et al. (+ **Heitsch, F.** and 17 co-authors) 2004, *Astrophys. Journal*, 154, 322-327

37. *A GLIMPSE of Star Formation in the Giant HII Region RCW 49*
Whitney, B.A., Indebetouw, R., Babler, B.L. et al. (+ **Heitsch, F.** and 17 co-authors) 2004, *Astrophys. Journal*, 154, 315-321
38. *Dust Heating by the Interstellar Radiation Field in Models of Turbulent Molecular Clouds*
Bethell, T., Zweibel, E.G., **Heitsch, F.**, Mathis, J.S. 2004, *Astrophys. Journal*, 610, 801-812
39. *Magnetic Flux Transport in the ISM Through Turbulent Ambipolar Diffusion*
Heitsch, F., Zweibel, E.G., Slyz, A. D., Devriendt, J.E.G. 2004, *ApSS*, 292, 45-51
40. *Canals beyond Mars. Beam Depolarization in Radio Continuum Maps of the Warm ISM*
Haverkorn, M., **Heitsch, F.** 2004, *Astronomy & Astrophysics*, 421, 1011-1019
41. *Kelvin-Helmholtz-Instability in a Weakly Ionized Medium*
Watson, C., Zweibel, E.G., **Heitsch, F.**, Churchwell, E. 2004, *Astrophys. Journal*, 608, 274-281
42. *The Formation of Protostellar Cores out of a Turbulent Cloud*
Li, P.S., Norman, M.L., Mac Low, M.-M., **Heitsch, F.** 2004, *Astrophys. Journal*, 605, 800-818
43. *Turbulent Ambipolar Diffusion: Numerical Studies in 2D*
Heitsch, F., Zweibel, E.G., Slyz, A.D., Devriendt, J.E.G. 2004, *Astrophys. Journal*, 603, 165-179
44. *Suppression of Fast Reconnection by Magnetic Shear*
Heitsch, F., Zweibel, E.G. 2003, *Astrophys. Journal* 590, 291-295
45. *Fast Reconnection in a Two-Stage Process*
Heitsch, F., Zweibel, E.G. 2003, *Astrophys. Journal*, 583, 229-244
46. *Numerical Simulations of Magnetic Fields in Astrophysical Turbulence*
Zweibel, E.G., **Heitsch, F.**, Fan, Y. 2003, *Lecture Notes in Physics*, 614, 101-126
47. *On the Structure of Self-gravitating Molecular Clouds*
Ossenkopf, V., Klessen, R.S., **Heitsch, F.** 2001, *Astronomy & Astrophysics*, 379, 1005-1016
48. *Magnetic Field Diagnostics Based on Far-Infrared Polarimetry: Numerical Simulations*
Heitsch, F., Zweibel, E.G., Mac Low, M.-M., Li, P.S., Norman, M.L. 2001, *Astrophys. Journal*, 561, 800-814

49. *Gravitational Collapse in Turbulent Molecular Clouds II. MHD Turbulence*
Heitsch, F., Mac Low, M.-M., Klessen, R.S. 2001, *Astrophys. Journal*, 547, 280-291
50. *The distribution of shock waves in driven supersonic turbulence*
Smith, M.D., Mac Low, M.-M., **Heitsch, F.** 2000, *Astronomy & Astrophysics*, 362, 333-341
51. *Gravitational Collapse in Turbulent Molecular Clouds I. Gasdynamical Turbulence*
Klessen, R.S., **Heitsch, F.**, Mac Low, M.-M. 2000, *Astrophys. Journal*, 535, 887-906
52. *The Metal-rich Globular Clusters of the Milky Way*
Heitsch, F., Richtler, T. 1999, *Astronomy & Astrophysics*, 347, 455-472

Refereed Articles: Submitted

53. *Very Large Array Observations of Ammonia in Infrared-Dark Clouds II: Internal Kinematics*
Ragan, S.E., **Heitsch, F.**, Bergin, E.A., Wilner, D., *Astrophys. Journal*
54. *Disruption of Molecular Clouds by Supernovae*
Heitsch, F., Hartmann, L., Mamajek, E., *Monthly Notices of the RAS*
55. *Faraday Tomography of an MHD-simulated Volume of Galactic ISM*
Schnitzeler, D.H.F.M., **Heitsch, F.**, Katgert, P., Haverkorn, M., *Astronomy & Astrophysics*

Conference Proceedings (non-refereed)

56. *The Gaseous Halo Mask*
Putman, M.E., Jounge, M.R., Grcevich, J., **Heitsch, F.** 2010
in “Galaxies and their Masks”
eds: D.L. Block, K.C. Freeman, I. Puerari; Springer, 87-96
57. *Dynamic Star Formation*
Hartmann, L., **Heitsch, F.**, Ballesteros-Paredes, J. 2009
in “Revista Mexicana de Astronomia y Astrofisica Conference Series”, 35, 66-67
58. *Advanced Numerical Methods in Astrophysical Fluid Dynamics*
Hujeirat, A., **Heitsch, F.** 2009
in “Structure Formation in Astrophysics”
ed: G. Chabrier; Cambridge University Press, 110-118

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59. *Flow-Driven Formation of Massive Cores: Rapid & Efficient?*
Heitsch, F., Hartmann, L. 2008
in “Massive Star Formation: Observations Confront Theory”
eds: H. Beuther, H. Linz, & T. Henning; ASP Conference Series 387, 15-19
60. *Determining the Magnetic Field Strength From Polarimetry of Dense Molecular Cloud Cores: Theoretical Considerations*
Heitsch, F. 2005
in “Astronomical Polarimetry: Current Status and Future Directions”
eds: A. Adamson, C. Aspin, C. Davis, & T. Fujiyoshi; ASP Conference Series 343, 166-170
61. *Flux Transport in the ISM through Turbulent Ambipolar Diffusion*
Heitsch, F. Zweibel, E.G., Slyz, A.D., Devriendt, J.E.G. 2004
in “Magnetic Fields and Star Formation: Theory versus Observations”,
eds: A.I. Gómez de Castro, Kluwer Academic Press
62. *Alfvén-wave Driven Turbulence in Molecular Clouds*
Heitsch, F., Burkert, A. 2002
in “Modes of Star Formation and the Origin of Field Populations”,
eds. E. K. Grebel & W. Brandner; ASP Conference Series 285, 13-16
63. *Can Magnetized Turbulence Support Molecular Clouds?*
Heitsch, F., M.-M. Mac Low, Klessen, R. 2000
in “Proceedings of the 33rd ESLAB Symposium, Star Formation from the Small to the Large Scale”,
ESTEC, Noordwijk, NL (ESA SP-445, Juni 2000); 391-392
64. *Effects of Magnetized Turbulence on the Structure and Dynamical Evolution of Molecular Clouds*
Heitsch, F., Mac Low, M.-M., Klessen, R. 1999
in “Plasma Turbulence and Energetic Particles” eds. Ostrowski, M. & Schlickeiser, R.,
Uniwersytet Jagiellonski, Kraków, 1999; 103-106

Invited Talks

1. *The Role of Filaments in Cloud Fragmentation, and the Formation of Cores*
at EPoS 2012 The Early Phase of Star Formation, Ringberg, Germany; 07/01-06/12
2. *Large-Scale Interactions, their Global Galactic Budget and their Role in Shaping the ISM*
at The Milky Way in the Herschel Era, Rome, Italy; 09/19-23/11
3. *What Turbulence Can (Not) Do for Massive Star Formation*
at Great Barriers in High-Mass Star Formation, Townsville, QL, Australia; 09/13-17/10
4. *A Continuous Structuring Process: From Cloud To Star Formation*
at Herschel and the Formation of Stars and Planetary Systems, Särö, Sweden; 09/06-09/10
5. *Physics of Cloud Formation and its Effect on Galactic Star Formation*
at From Stars to Galaxies, Gainesville, FL; 04/07-10/10
6. *The Flow-Driven Formation of Molecular Clouds: Insights from Numerical Models*
at Pearls '09, Space Telescope Science Institute, Baltimore, MD; 10/01/09
7. *Setting the Star Formation Efficiency: Lessons from Detailed Numerical Simulations*
at The SFR50, Abbazia di Spineto, Italy; 07/07/2009
8. *The Making Molecular Clouds: The Role of Magnetohydrodynamical and Thermal Instabilities*
at Turbulence and Hydrodynamical Instabilities, Garching, Germany; 11/19/2008
9. *Rapid Star Formation in Colliding Flows: the Molecular Perspective*
at HI Survival through Cosmic Times, Abbazia di Spineto, Italy; 06/14/2007
10. *Magnetohydrodynamic Boltzmann Solvers*
at Structure Formation in the Universe: Galaxies, Stars Planets, Chamonix, France; 05/29/2007
11. *Formation of Small Scale Structure in Large Scale Flows in the ISM*
at Microstructures in the Interstellar Medium, Lake Geneva, WI; 04/24/2007
12. *Turbulence Generation in Filamentary Molecular Clouds: a modeler's view*
at Annual Conference of the Astronomische Gesellschaft, Cologne, Germany; 09/30/2005

Colloquia

U Rochester (03/28/2011);
NC State (10/19/2009);
Herzberg Institute of Astrophysics, Victoria (04/28/2009);
U Michigan (03/19/2009);
UNC Chapel Hill (03/16/2009);
U Oakland (02/19/2009);
Columbia U (02/04/2009);
U Arizona-Tucson/Steward Observatory (03/06/2008);
U Wyoming, Laramie (11/27/2007);
U Florida, Gainesville (10/10/2007);
UNAM Morelia (12/14/2006);
U Toledo (12/07/2006);
U Iowa (12/04/2006);
U Colorado-Boulder (11/29/2006);
U Michigan, Ann Arbor (11/09/2006);
U Illinois, Urbana-Champaign (10/24/2006);
USM Munich (05/31/2006);
U Tübingen (05/29/2006);
MPIfR Bonn (10/14/2005);
U Wisconsin-Madison (09/06/2005);
U Basel (06/21/2005);
AIP Potsdam (11/11/2004);
U Wisconsin-Madison (09/16/2003);
MPIA Heidelberg (01/28/2000, 06/01/2001);

Selected Seminars

Northwestern, Evanston/IL (05/11/2010);
U Oxford (05/31/2008);
U Princeton (09/24/2007);
Northwestern, Evanston/IL (01/22/2008);
U Virginia-Charlottesville (05/15/2007);
U Iowa (12/05/2006);
U Chicago (04/07/2004);
ENS Lyon (11/18/2003);
U Chicago (04/08/2003);
U Colorado-Boulder (11/21/2002);
AMNH, New York (08/19/2002);
MPIA Heidelberg (06/10/2002);
U Oxford (06/03/2002);
U Colorado-Boulder (10/26/2001)
U Illinois, Urbana-Champaign (04/24/2000);