

Ralf Klessen — List of Publications

Book:

- “Sternentstehung: Vom Urknall bis zur Geburt der Sonne”, Klessen, R. S., published in September 2006 by Elsevier, 96 pages (ISBN-13: 978-3-8274-1801-2)

Theses:

- “The Relation between Interstellar Turbulence and Star Formation”, Klessen, R. S., 2003, habilitation thesis at University of Potsdam, 154 pages (astro-ph/0402673)
- “Fragmentation of Molecular Clouds: The Initial Phase of a Stellar Cluster”, Klessen, R. S., 1998, dissertation at the University of Heidelberg, 200 pages
- “Über die Natur der Dicken Scheibe unserer Milchstraße”, Klessen, R. S., 1994, diploma thesis at the Technical University of Munich, 126 pages

Invited Reviews:

- “Numerical Star Formation Studies – A Status Report”, Klessen, R. S., Heitsch, F., Krumholz, M. R., 2011, *Advanced Science Letters*, 4, 258 – 285 [arXiv:0906.4452]
- “Molecular Cloud Turbulence and Star Formation”, Ballesteros-Paredes, J., Klessen, R. S., Mac Low, M.-M., Vázquez-Semadeni, E., 2007, in *Protostars & Planets V*, eds. B. Reipurth, D. Jewitt, and K. Keil (University of Arizona Press), 63 – 80 [astro-ph/0603357 or <http://www.ifa.hawaii.edu/UHNAI/ppv/sec1-5.pdf>]
- “The Control of Star Formation by Supersonic Turbulence”, Mac Low, M.-M., Klessen, R. S., 2004, *Reviews of Modern Physics*, 76, 125 – 194
- “Star Formation from Interstellar Clouds”, Klessen, R. S., 2003, *Reviews in Modern Astronomy*, 16, 23 – 54 (Ludwig Biermann Lecture) [astro-ph/0301381]

Articles in Refereed Journals:

- “The Star Formation Rate of Turbulent Magnetized Clouds: Comparing Theory, Simulations, and Observations”, Federrath, C., Klessen, R. S., 2012, *The Astrophysical Journal*, 761, 156
- “Weakly Interacting Massive Particle Dark Matter and First Stars: Suppression of Fragmentation in Primordial Star Formation”, Smith, R. J., Iocco, F., Glover, S. C. O., Schleicher, D. R. G., Klessen, R. S., Hirano, S., Yoshida, N., 2012, *The Astrophysical Journal*, 761, 154
- “A New Density Variance-Mach Number Relation for Subsonic and Supersonic Isothermal Turbulence”, Konstandin, L., Girichidis, P., Federrath, C., Klessen, R. S., 2012, *The Astrophysical Journal*, 761, 149
- “The Impact of Thermodynamics on Gravitational Collapse: Filament Formation and Magnetic Field Amplification”, Peters, T., Schleicher, D. R. G., Klessen, R. S., Banerjee, R., Federrath, C., Smith, R. J., Sur, S., 2012, *The Astrophysical Journal*, 760, L28
- “Are Molecular Outflows around High-mass Stars Driven by Ionization Feedback?”, Peters, T., Klaassen, P. D., Mac Low, M.-M., Klessen, R. S., Banerjee, R., 2012, *The Astrophysical Journal*, 760, 91
- “The Linewidth-Size Relationship in the Dense Interstellar Medium of the Central Molecular Zone”, Shetty, R., Beaumont, C. N., Burton, M. G., Kelly, B. C., Klessen, R. S., 2012, *Monthly Notices of the Royal Astronomical Society*, 425, 720

- “How Long Does it Take to Form a Molecular Cloud?”, Clark, P. C., Glover, S. C. O., Klessen, R. S., Bonnell, I. A., 2012, *Monthly Notices of the Royal Astronomical Society*, 424, 2599
- “The Small-scale Dynamo and Non-ideal Magnetohydrodynamics in Primordial Star Formation”, Schober, J., Schleicher, D. R. G., Federrath, C., Glover, S. C. O., Klessen, R. S., Banerjee, R., 2012, *The Astrophysical Journal*, 754, 99
- “Variable Accretion Rates and Fluffy First Stars”, Smith, R. J., Hosokawa, T., Omukai, K., Glover, S. C. O., Klessen, R. S., 2012, *Monthly Notices of the Royal Astronomical Society*, 424, 457
- “Formation and Evolution of Primordial Protostellar Systems”, Greif, T. H., Bromm, V., Clark, P. C., Glover, S. C. O., Smith, R. J., Klessen, R. S., Yoshida, N., Springel, V., 2012, *Monthly Notices of the Royal Astronomical Society*, 424, 399
- “Magnetic Field Amplification During Gravitational Collapse – Influence of Turbulence, Rotation and Gravitational Compression”, Sur, S., Federrath, C., Schleicher, D. R. G., Banerjee, R., Klessen, R. S., 2012, *Monthly Notices of the Royal Astronomical Society*, 423, 3148
- “The density variance-Mach number relation in supersonic turbulence - I. Isothermal, magnetized gas”, Molina, F. Z., Glover, S. C. O., Federrath, C., Klessen, R. S., 2012, *Monthly Notices of the Royal Astronomical Society*, 423, 2680
- “The First Galaxies: Assembly with Black Hole Feedback”, Jeon, M., Pawlik, A. H., Greif, T. H., Glover, S. C. O., Bromm, V., Milosavljevic, M., Klessen, R. S., 2012, *The Astrophysical Journal*, 754, 34
- “Disc Formation in Turbulent Massive Cores: Circumventing the Magnetic Braking Catastrophe”, Seifried, D., Banerjee, R., Pudritz, R. E., Klessen, R. S., 2012, *Monthly Notices of the Royal Astronomical Society*, 423, L40
- “Clump Mass Function at an Early Stage of Molecular Cloud Evolution: I. A Statistical Approach”, Donkov, S., Veltchev, T. V., Klessen, R. S., 2012, *Monthly Notices of the Royal Astronomical Society*, 423, 889
- “Magnetic fields during the early stages of massive star formation - II. A generalised outflow criterion”, Seifried, D., Pudritz, R. E., Banerjee, R., Duffin, D., Klessen, R. S., 2012, *Monthly Notices of the Royal Astronomical Society*, 422, 347
- “Line Profiles of Cores within Clusters: I. The Anatomy of a Filament”, Smith, R. J., Shetty, R., Stutz, A. M., Klessen, R. S., *The Astrophysical Journal*, 750, 64
- “On the Formation of Very Metal-Poor Stars: The Case of SDSS J1029151+172927”, Klessen, R. S., Glover, S. C. O., Clark, P. C., 2012, *Monthly Notices of the Royal Astronomical Society*, 421, 3217
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- “Magnetic Field Amplification by Small-Scale Dynamo Action: Dependence on Turbulence Models, Reynolds and Prandtl Numbers”, Schober, J., Schleicher, D. R. G., Federrath, C., Klessen, R. S., Banerjee, R., 2012, *Physical Reviews E*, 85, 026303
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- “Mass-Density Relationship in Molecular Cloud Clumps”, Donkov, S., Veltchev, T. V., Klessen, R. S., 2011, *Monthly Notices of the Royal Astronomical Society*, 418, 916
- “Importance of the Initial Conditions for Star Formation - II. Fragmentation Induced Starvation and Accretion Shielding”, Girichidis, P., Federrath, C., Banerjee, R., Klessen, R. S., 2011, *Monthly Notices of the Royal Astronomical Society*, 420, 613
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