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Publikationsliste

1.1 Diplom- und Doktorarbeiten, Habilitationsschrift

1. Kupka, F., *Modellatmosphären und synthetische Spektren am Beispiel von α Circini*, Diplomarbeit, Institut für Astronomie, Univ. Wien (1994) (159 Seiten, auf Deutsch)

2. Kupka, F., *Entwicklung eines hybriden Particle-Mesh Ewald Verfahrens*, Diplomarbeit, Institut für Experimentalphysik, Univ. Wien (1996) (122 Seiten, auf Deutsch)

3. Kupka, F., *Sparse Grid Spectral Methods for the Numerical Solution of Partial Differential Equations with Periodic Boundary Conditions*, deutschsprachiger Titel: *Spektralmethoden auf dünnen Gittern zur numerischen Lösung partieller Differentialgleichungen mit periodischen Randbedingungen*, Doktorarbeit, Institut für Mathematik, Univ. Wien (1997) (165 Seiten, größtenteils auf Englisch)

4. Kupka, F., *Konvektion und konvektives Mischen in der stellaren Astrophysik*, englischsprachiger Titel: *Convection and Convective Mixing in Stellar Astrophysics*, Habilitationsschrift, Fakultät für Physik, TU München (2007) (344 Seiten, größtenteils auf Englisch)

1.2 Co-Editor von Tagungsberichten und Monographien

1.2.1 Erschienen

1. Adelman, S.J., Kupka, F., Weiss, W.W., *M.A.S.S. - Model Atmospheres and Spectrum Synthesis*, ASP Conf. Ser. Vol. 108, San Francisco (1996) (ca. 320 Seiten)

2. Kupka, F., Hillebrandt, W., *Proceedings of the Workshop on "Interdisciplinary Aspects of Turbulence"*, Proceedings MPA/P15, Garching (2005) (ca. 188 Seiten)

3. Kupka, F., Roxburgh, I.W., Chan, K.L., *Proceedings of the IAU Symposium 239 "Convection in Astrophysics"*, Cambridge University Press, Cambridge (2007) (ca. 540 Seiten)

4. Hillebrandt, W., Kupka, F., *Interdisciplinary Aspects of Turbulence*, Lecture Notes in Physics Vol. 756, Springer Verlag, Berlin (2009) (ca. 340 Seiten, ISBN: 978-3-540-78960-4)

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2. Piskunov, N.E., Kupka, F., Ryabchikova, T.A., Weiss, W.W., Jeffery, C.S., *VALD: The Vienna Atomic Line Data Base*, Astron. Astrophys. Suppl. 112, 525-535 (1995)

3. Kupka, F. Ryabchikova, T.A., Weiss, W.W., Kuschnig, R., Rogl, J., Mathys, G., *Abundance Analysis of roAp stars. I. alpha Circini*, Astron. Astrophys. 308, 886-894 (1996)

4. Gelbmann, M., Kupka, F., Weiss, W.W., Mathys, G., *Abundance Analysis of roAp stars.* II. HD 203932, Astron. Astrophys. 319, 630-636 (1997) (and Astron. Astrophys. 322, 1026 (1997)

5. Smalley, B., Kupka, F., *The role of convection on the uvby colours of A, F, and G stars*, Astron. Astrophys. 328, 349-360 (1997)

6. Audard, N., Kupka, F., Morel, P., Provost, J., Weiss, W.W., *The acoustic cut-off frequency of roAp stars*, Astron. Astrophys. 335, 954-958 (1998)

7. Heiter, U., Kupka, F., Paunzen, E., Weiss, W.W., Gelbmann, M., *Abundance analysis of the λ Bootis stars HD 192640, HD 183324 and HD 84123*, Astron. Astrophys. 335, 1009-1017 (1998)

8. Gardiner, R.B., Kupka, F., Smalley, B., *Testing convection theories using Balmer line profiles of A, F and G stars*, Astron. Astrophys. 347, 876-890 (1999)

9. Kupka, F., *Turbulent convection: comparing the moment equations to numerical simulations*, Astrophys. Journal Letters 526, L45-L48 (1999)

10. Kupka, F., Piskunov, N., Ryabchikova, T.A., Stempels H.C., Weiss, W.W., *VALD-2: Progress of the Vienna Atomic Line Data Base*, Astron. Astrophys. Suppl. 138, 119-133 (1999)

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12. Ryabchikova, T., Piskunov, N., Savanov, I., Kupka, F., Malanushenko, V., Eu III *identification and* Eu *abundance in cool CP stars*, Astron. Astrophys. 343, 229-236 (1999)

13. Ryabchikova, T.A., Piskunov, N.E., Stempels, H.C., Kupka, F., Weiss, W.W., *The Vienna Atomic Line Data Base - a Status Report* in Proc. of the 6th Int. Coll. on Atomic Spectra and Oscillator Strengths, Victoria BC, Canada, 1998, Phys. Scripta T83, 162-173 (1999)

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30. Samadi, R., Kupka, F., Goupil, M.-J., Lebreton, Y., van't Veer-Menneret, C., *Influence of local treatments of convection upon solar p mode excitation rates.*, Astron. Astrophys. 445, 233-242 (2006)

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35. Muthsam, H.J., Löw-Baselli, B., Obertscheider, Chr., Langer, M., Lenz, P., Kupka, F., *High-resolution models of solar granulation: the two-dimensional case*, Mon. Not. Roy. Astron. Soc. 380, 1335-1340 (2007)

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54. Kupka, F., Zaussinger, F., Montgomery, M.H., *Mixing and Overshooting in Surface Convection Zones of DA White Dwarfs: First Results from ANTARES*, Mon. Not. Roy. Astron. Soc. 474, 4660–4671 (2018) published online at `http://dx.doi.org/10.1093/mnras/stx3119` preprint available at `http://arxiv.org/abs/1712.00641`

55. Belkacem, K., Kupka, F., Samadi, R., Grimm-Strele, H., *Solar p-mode damping rates: insight from a 3D hydrodynamical simulation*, Astron. Astrophys. 625, A20 (2019), 15 pages, published online at `https://doi.org/10.1051/0004-6361/201834223`, preprint available at `http://arxiv.org/abs/1903.05479`

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57. Kostogryz, N., Kupka, F., Piskunov, N., Fabbian, D., Krüger, D., Gizon, L., *Accurate short-characteristics radiative transfer in A Numerical Tool for Astrophysical RE-Search (ANTARES)*, Solar Physics 296, 46 (2021), 24 pages, published online at `https://doi.org/10.1007/s11207-021-01777-6`

58. Belkacem, K., Kupka, F., Philidet, J., Samadi, R., *Surface effects and turbulent pressure. Assessing the Gas-*$\Gamma 1$ *and Reduced-*$\Gamma 1$ *empirical models*, Astron. Astrophys. 646, L5 (2021), 7 pages, published online at `https://doi.org/10.1051/0004-6361/202040259`

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60. Kupka, F., Ahlborn, F., Weiss, A., *Stellar evolution models with overshooting based on 3-equation non-local theories: I. Physical basics and the computation of the dissipation rate*, Astron. Astrophys. 667, A96 (2022), 17 pages, published online at `https://doi.org/10.1051/0004-6361/202243125`

61. Ahlborn, F., Kupka, F., Weiss, A., Flaskamp, M., *Stellar evolution models with overshooting based on 3-equation non-local theories: II. Main sequence models of A- and B-type stars*, Astron. Astrophys. 667, A97 (2022), 17 pages, published online at `https://doi.org/10.1051/0004-6361/202243126`

1.3.2 Bereits eingereicht

1. Kupka, F., Fabbian, D., Zaussinger, F., Krüger, D., Gizon, L., *Swaying oscillations in turbulent Rayleigh-Bénard convection at low Prandtl number*, submitted to Astron. Astrophys. (2023)

2. Koch, O., Acar, K., Auzinger, W., Kupka, F., Moser, B., *Adaptive exponential multi-operator splitting for MHD*, submitted to Int. Jour. Appl. Comp. Math. (2023)

1.4 Beiträge in Monographien

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1. Hillebrandt, W., Kupka, F., *An Introduction to Turbulence*, in *Interdisciplinary Aspects of Turbulence*, Lecture Notes in Physics Vol. 756, 1–20, edts. W. Hillebrandt, F. Kupka, Springer Verlag, Berlin (2009)

2. Kupka, F., *Turbulent Convection and Numerical Simulations in Solar and Stellar Astrophysics*, in *Interdisciplinary Aspects of Turbulence*, Lecture Notes in Physics Vol. 756, 49–105, edts. W. Hillebrandt, F. Kupka, Springer Verlag, Berlin (2009)

3. Zaussinger, F., Kupka, F., Muthsam, H.J., *Semiconvection*, in *Studying Stellar Rotation and Convection: Theoretical Background and Seismic Diagnostic*, Lecture Notes in Physics Vol.

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4. Kupka, F., *Thermal Convection in Stars and in Their Atmosphere*, in *Multi-Dimensional Processes In Stellar Physics*, edts. M. Rieutord, I. Baraffe, Y. Lebreton, EDP Sciences Proceedings, Les Ulis (2020), 69–110, preprint available at `https://arxiv.org/abs/2001.11540`

1.5 Tagungsberichte

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7. Kupka, F., Grimm-Strele, H., Happenhofer, N., Higueras, I., Koch, O., Muthsam, H.J., *Improved Time Integration for WENO Methods in Astrophysical Applications*, in *8th International Conference of Numerical Modeling of Space Plasma Flows (ASTRONUM 2013)*, edts. N.V. Pogorelov, E. Audit, G.P. Zank, Astron. Soc. Pacific Conf. Ser. Vol. 488, 243–248, San Francisco (2014)

8. Blies, P.M., Kupka, F., Muthsam, H.J., *The ANTARES Code: New Developments*, in *Numerical Modeling of Space Plasma Flows ASTRONUM-2014 (9th Annual International Conference)*, edts. N.V. Pogorelov, E. Audit, G.P. Zank, Astron. Soc. Pacific Conf. Ser. Vol. 498, 191–196, San Francisco (2015) (free access at `http://www.aspbooks.org/a/volumes/article_details/?paper_id=37447`)

9. Zaussinger, F., Kupka, F., Egbers, Ch., Neben, M., Hücker, S., Bahr, C., Schmitt, M., *Semi-convective layer formation*, in *11th International Conference on Numerical Modeling of Space Plasma Flows: ASTRONUM-2016*, edts. N.V. Pogorelov, E. Audit, G.P. Zank, Journal of Physics: Conf. Series 837, 012012 (2017) (7 pages)

10. Zaussinger, F., Kupka, F., Montgomery, M.H., Egbers, Ch., *Numerical simulation of DA white dwarf surface convection*, in *Numerical Modeling of Space Plasma Flows: ASTRONUM-2017 (12th International Conference*, edts. N.V. Pogorelov, E. Audit, G.P. Zank, Journal of Physics: Conf. Series Vol. 1031, 012013 (2018) (7 pages)

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1.5.2 Referierte Tagungsberichte, im Druck

1. Kupka, F., *Modelling of Coherent Structures in Turbulent Convection*, in Turbulence and wave processes, edts. K. Moffat, D. Georgievsky, D. Millionshchikov, A. Petrosyan, 13 pages, accepted for publication in Journal of Physics: Conference Series (2024)

1.5.3 Tagungsberichte (inkl. Übersichtsvorträge und kleiner referierter Berichte)

1. Kupka, F., *Beyond Mixing Length Theory*, in *M.A.S.S. - Model Atmospheres and Spectrum Synthesis*, edts. S.J. Adelman, F. Kupka and W.W. Weiss, ASP Conf. Ser. Vol. 108, 73-84, San Francisco (1996)

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1.7 Vorsitz bei Plenardiskussionen

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