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## Publikationsliste

### 1.1 Diplom- und Doktorarbeiten, Habilitationsschrift

1. Kupka, F., *Modellatmosphären und synthetische Spektren am Beispiel von  $\alpha$  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)

## 1.3 Publikationen in referierten Journalen

### 1.3.1 Erschienen

1. Muthsam, H.J., Göb, W., Kupka, F., Liebich, W., Zöchling, J., *A numerical study of compressible convection*, Astron. Astrophys. 293, 127-141 (1995)
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  $\lambda$  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)
11. Muthsam, H.J., Göb, W., Kupka, F., Liebich, W., *Interacting Convection Zones*, New Astronomy 4, 405-417 (1999)
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)
14. Cowley, C.R., Ryabchikova, T., Kupka, F., Bord, D.J., Mathys, G., Bidelman, W.P., *Abundances in Przybylski's star*, Mon. Not. Roy. Astron. Soc. 317, 299-309 (2000)
15. Gelbmann, M.J., Ryabchikova, T., Weiss, W.W., Piskunov, N.E., Kupka, F., Mathys, G., *Abundance analysis of roAp stars V: HD 166473*, Astron. Astrophys. 356, 200-208 (2000)

16. Montalbán, J., Kupka, F., D'Antona, F., Schmidt, W., *Convection in the atmospheres and envelopes of turnoff and giant branch stars of globular clusters*, Astron. Astrophys. 370, 982-990 (2001)
17. Piskunov, N., Kupka, F., *Model atmospheres with individualized abundances*, Astrophys. Jour. 547, 1040-1056 (2001)
18. D'Antona, F., Montalbán, J., Kupka, F., Heiter, U., *The Böhm-Vitense gap: the role of turbulent convection*, Astrophys. Jour. 564, L93-L96 (2002)
19. Heiter, U., Kupka, F., van 't Veer-Menneret, C., Barban, C., Weiss, W.W., Goupil, M.-J., Schmidt W., Katz, D., Garrido, R., *New grids of ATLAS9 atmospheres I: Influence of convection treatments on model structure and on observable quantities*, Astron. Astrophys. 392, 619-636 (2002)
20. Kochukhov, O., Landstreet, J.D., Ryabchikova, T., Weiss, W.W., Kupka, F., *Discovery of rapid radial velocity variations in the roAp star 10 Aql and possible pulsations of  $\beta$  CrB*, Mon. Not. Roy. Astron. Soc. 337, L1-L5 (2002)
21. Kupka, F., Montgomery, M.H., *A-star envelopes: a test of local and non-local models of convection*, Mon. Not. Roy. Astron. Soc. 330, L6-L10 (2002)
22. Smalley, B., Gardiner, R.B., Kupka, F., Bessell, M.S., *On the anomaly of Balmer line profiles of A type stars. Fundamental binary systems.*, Astron. Astrophys. 395, 601-609 (2002)
23. Barban, C., Goupil, M.-J., van 't Veer-Menneret, C., Garrido, R., Kupka, F., Heiter, U., *New grids of ATLAS9 atmospheres II: Limb-darkening coefficients for the Strömgren photometric system for A-F stars*, Astron. Astrophys. 405, 1095-1105 (2003)
24. Kupka, F., Paunzen, E., Maitzen, H.M., *The 5200-Å flux depression of chemically peculiar stars – I. Synthetic  $\Delta a$  photometry: the normality line*, Mon. Not. Roy. Astron. Soc. 341, 849-854 (2003)
25. Kupka, F., Paunzen, E., Iliev, I.Kh., Maitzen, H.M., *The 5200-Å flux depression of chemically peculiar stars – II. The cool CP and  $\lambda$  Bootis stars.*, Mon. Not. Roy. Astron. Soc. 352, 863-876 (2004)
26. Montalbán, J., D'Antona, F., Kupka, F., Heiter, U., *Convection in the atmospheres and envelopes of Pre-Main Sequence stars*, Astron. Astrophys. 416, 1081-1096 (2004)
27. Montgomery, M.H., Kupka, F., *White dwarf envelopes: further tests of non-local models of convection*, Mon. Not. Roy. Astron. Soc. 350, 267-276 (2004)
28. Nendwich, J., Heiter, U., Kupka, F., Nesvacil, N., Weiss, W.W., *Interpolation of Stellar Model Grids and Application to the NEMO Grid*, Comm. in Asteroseismology 144, 43-78 (2004)
29. Kupka, F., *Some physics we can learn from spectroscopy of A-type stars* in Proc. of the 8th Int. Coll. on Atomic Spectra and Oscillator Strengths, Madison WI, USA, 2004, Phys. Scripta T119, 20-25 (2005)

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)
31. Frémaux, J., Kupka, F., Boisson, C., Joly, M., Tsymbal, V., *Prospects for population synthesis in the H band: NeMo grids of stellar atmospheres compared to observations*, Astron. Astrophys. 449, 109-125 (2006)
32. Belkacem, K., Samadi, R., Goupil, M.-J., Kupka, F., *A Closure Model with Plumes. I. The Solar Convection*, Astron. Astrophys. 460, 173-182 (2006)
33. Belkacem, K., Samadi, R., Goupil, M.-J., Kupka, F., Baudin, F., *A Closure Model with Plumes. II. Application to the Stochastic Excitation of Solar p-modes*, Astron. Astrophys. 460, 183-190 (2006)
34. Kupka, F., Robinson, F.J., *On the effects of coherent structures on higher order moments in models of solar and stellar surface convection*, Mon. Not. Roy. Astron. Soc. 374, 305-322 (2007)
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)
36. Samadi, R., Belkacem, K., Goupil, M.J., Dupret, M.-A., Kupka, F., *Modelling the excitation of acoustic modes in  $\alpha$  Cen A*, Astron. Astrophys. 489, 291-299 (2008)
37. Landstreet, J.D., Kupka, F., Ford, H.A., Officer, T., Sigut, T.A.A., Silaj, J., Strasser, S., Townshend, A., *Atmospheric velocity fields in tepid main sequence stars*, Astron. Astrophys. 503, 973-984 (2009)
38. Kupka, F., Ballot, J., Muthsam, H.J., *Effects of resolution and helium abundance in A star surface convection simulations*, Comm. in Asteroseismology 160, 30-63 (2009)
39. Muthsam, H.J., Kupka, F., Löw-Baselli, B., Obertscheider, C., Langer, M., Lenz, P., *ANTARES – A Numerical Tool for Astrophysical RESEARCH With applications to solar granulation*, New Astronomy 15, 460–475 (2010)
40. Chaplin, W.J., et al. (with 108 co-authors including F. Kupka), *The asteroseismic potential of Kepler: first results for solar-type stars*, Astrophys. Jour. Letters 713, L169–L175 (2010)
41. Dubernet, M.L., et al. (with 31 co-authors including F. Kupka), *Virtual atomic and molecular data centre*, Jour. Quant. Spectr. Rad. Transfer 111, 2151–2159 (2010)
42. Karoff, C., et al. (with 48 co-authors including F. Kupka), *Asteroseismology of solar-type stars with Kepler I: Data analysis*, Astronon. Nachrichten 331, 972–976 (2010)
43. Kupka, F., Happenhofer, N., Higuera, I., Koch, O., *Total-Variation-Diminishing Implicit-Explicit Runge-Kutta Methods for the Simulation of Double-Diffusive Convection in Astrophysics*, J. Comput. Phys. 231, 3561–3586 (2012)

44. Happenhofer, N., Grimm-Strele, H., Kupka, F., Löw-Baselli, B., Muthsam, H., *A Low Mach Number Solver: Enhancing Applicability*, J. Comput. Phys. 236, 96–118 (2013)
45. Mundprecht, E., Muthsam, H.J., Kupka, F., *Multidimensional realistic modelling of Cepheid-like variables — I. Extensions of the ANTARES code*, Mon. Not. Roy. Astron. Soc. 435, 3191–3205 (2013)
46. Grimm-Strele, H., Kupka, F., Muthsam, H.J., *Curvilinear Grids for WENO Methods in Astrophysical Simulations*, Comp. Phys. Comm. 185 (3), 764–776 (2014)
47. Higuera, I., Happenhofer, N., Koch, O., Kupka, F., *Optimized Strong Stability Preserving IMEX Runge-Kutta Methods*, Jour. Comp. Appl. Math. 272, 116–140 (2014)
48. Rauer, H., et al. (with 160 co-authors including F. Kupka), *The PLATO 2.0 Mission*, Experimental Astronomy 38, 249–330 (2014)
49. Grimm-Strele, H., Kupka, F., Löw-Baselli, B., Mundprecht, E., Zaussinger, F., Schiavsky, P., *Realistic Simulations of Stellar Surface Convection with ANTARES: I. Boundary Conditions and Model Relaxation*, New Astronomy 34, 278–293 (2015)
50. Grimm-Strele, H., Kupka, F., Muthsam, H.J., *Achievable Efficiency of Numerical Methods for Simulations of Solar Surface Convection*, Comp. Phys. Comm. 188, 7–20 (2015)
51. Mundprecht, E., Muthsam, H.J., Kupka, F., *Multidimensional realistic modelling of Cepheid-like variables – II: Analysis of a Cepheid model*, Mon. Not. Roy. Astron. Soc. 449, 2539–2552 (2015)
52. Kupka, F., Losch, M., Zaussinger, F., Zweigle, T., *Semi-convection in the ocean and in stars: A multi-scale analysis*, Met. Zeitschrift 24(3), 343–358 (2015), free access online at <http://dx.doi.org/10.1127/metz/2015/0643>
53. Kupka, F., Muthsam, H.J., *Modelling of Stellar Convection*, Living Rev. in Comp. Astrophys. 3:1 (2017), 159 pages, free access online at <http://dx.doi.org/10.1007/s41115-017-0001-9>
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>
56. Zaussinger, F., Kupka, F., *Layer formation in double-diffusive convection over resting and moving heated plates*, Theor. Comp. Fluid Dyn. 33, 383–409 (2019), published online at <https://doi.org/10.1007/s00162-019-00499-7>, preprint available at <http://arxiv.org/abs/1811.11800>

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>
59. Spada, F., Demarque, P., Kupka, F., *Stellar evolution models with entropy-calibrated mixing-length parameter: application to red giants*, Mon. Not. Roy. Astron. Soc. 504, 3128–3138 (2021), published online at <http://dx.doi.org/10.1093/mnras/stab1106>, preprint available at <http://arxiv.org/abs/2104.08067>
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

### 1.4.1 Erschienen

1. Hillebrandt, W., Kupka, F., *An Introduction to Turbulence*, in *Interdisciplinary Aspects of Turbulence*, Lecture Notes in Physics Vol. 756, 1–20, eds. 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, eds. 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.

865, 219–237, eds. M. Goupil, K. Belkacem, C. Neiner, F. Lignières, J.J. Green, Springer Verlag, Berlin (2013)

4. Kupka, F., *Thermal Convection in Stars and in Their Atmosphere*, in *Multi-Dimensional Processes In Stellar Physics*, eds. 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

### 1.5.1 Referierte Tagungsberichte

1. Kupka, F., *New models for the convective flux in stellar atmospheres*, in *Stellar Surface Structure*, IAU Symposium 176, 557-564, eds. K.G. Strassmeier, J.L. Linsky, Kluwer, Dordrecht (1996)
2. Kupka, F., *Sparse grid spectral methods and some results from approximation theory*, in *Domain Decomposition 11*, 57-64, eds. C.-H.Lai, P.E.Bjørstad, M.Cross & O.B.Widlund, Greenwich, UK (1999) (<http://www.ddm.org/DD11/Kupka.pdf>)
3. Kupka, F., Muthsam, H.J., Zaussinger, F., Grimm-Strele, H., Happenhofer, N., Löw-Baselli, B., Mundprecht, E., Obertscheider, C., *Solar Surface Flow Simulations at Ultra-High Resolution*, in *High Performance Computing in Science and Engineering, Garching/Munich 2009*, 415–425, eds. S. Wagner, M. Steinmetz, A. Bode and M.M. Müller, Springer Verlag, Berlin (2010)
4. Kupka, F., and the VAMDC Collaboration (P.I. M.-L. Dubernet), *VAMDC as a resource for atomic and molecular data and the new release of VALD*, *Baltic Astronomy* 20(4), 503-510 (2011)
5. Happenhofer, N., Koch, O., Kupka, F., Zaussinger, F., *Total Variation Diminishing Implicit Runge–Kutta Methods for Dissipative Advection–Diffusion Problems in Astrophysics*, *PAMM – Proceedings in Applied Mathematics and Mechanics* 11, 777-778 (2011)
6. Kupka, F., Mundprecht, E., Muthsam, H.J., *Pulsation – Convection Interaction*, in *Precision Asteroseismology*, IAU Symposium 301, eds. W. Chaplin, J. Guzik, G. Handler, A. Pigulski, 177–184 (2014)
7. Kupka, F., Grimm-Strele, H., Happenhofer, N., Higuera, 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)*, eds. 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)*, eds. 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](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*, eds. 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)*, eds. N.V. Pogorelov, E. Audit, G.P. Zank, Journal of Physics: Conf. Series Vol. 1031, 012013 (2018) (7 pages)
11. Krüger, D., Kostogryz, N., Fabbian, D., Kupka, F., *Improved Radiative Transfer in the ANTARES Code*, in *Numerical Modeling of Space Plasma Flows: ASTRONUM-2018 (13th International Conference)*, eds. N.V. Pogorelov, E. Audit, G.P. Zank, Journal of Physics: Conf. Series Vol. 1225, 012017 (2019) (9 pages)
12. Fabbian, D., Kupka, F., Krüger, D., Kostogryz, N. M., Piskunov, N., *Shine BRITE: shedding light on stellar variability through advanced models*, in *Proceedings of the conference Stars and their Variability Observed from Space*, eds. C. Neiner, W. W. Weiss, D. Baade, R. E. Griffin, C. C. Lovekin, A. F. J. Moffat, Univ. of Vienna (2020), 155–159, online available at [https://ui.adsabs.harvard.edu/link\\_gateway/2020svos.conf..155F/PUB\\_PDF](https://ui.adsabs.harvard.edu/link_gateway/2020svos.conf..155F/PUB_PDF)
13. Kupka, F., *3D Hydrodynamical Simulations of Stellar Convection for Helio- and Asteroseismology*, in *Proceedings of the conference Stars and their Variability Observed from Space*, eds. C. Neiner, W. W. Weiss, D. Baade, R. E. Griffin, C. C. Lovekin, A. F. J. Moffat, Univ. of Vienna (2020), 209–214, online available at [https://ui.adsabs.harvard.edu/link\\_gateway/2020svos.conf..209K/PUB\\_PDF](https://ui.adsabs.harvard.edu/link_gateway/2020svos.conf..209K/PUB_PDF)
14. Kupka, F., Zaussinger, F., Fabbian, D., Krüger, D., *The ANTARES code: recent developments and applications*, in *Numerical Modeling of Space Plasma Flows: ASTRONUM-2019 (14th International Conference)*, eds. N.V. Pogorelov, E. Audit, G.P. Zank, Journal of Physics: Conf. Series Vol. 1623, 012016 (2020) (11 pages)

### 1.5.2 Referierte Tagungsberichte, im Druck

1. Kupka, F., *Modelling of Coherent Structures in Turbulent Convection*, in *Turbulence and wave processes*, eds. 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*, eds. S.J. Adelman, F. Kupka and W.W. Weiss, ASP Conf. Ser. Vol. 108, 73-84, San Francisco (1996)



2. Ryabchikova, T.A., Piskunov, N.E., Kupka, F., Weiss, W.W., *The Vienna Atomic Line database: present state and future development*, in *International Cooperation in Dissemination of the Astronomical Data*, eds. F. Ochsenbein and A. Hearn, *Baltic Astronomy* 6(2), 244-247 (1997)
3. Audard, N., Kupka, F., Morel, P., Provost, J., Weiss, W.W., *Atmospheric structure and acoustic cut-off frequency of roAp stars*, in *Europ. Work. Group for CP stars, 26<sup>th</sup> Workshop*, eds. P. North, J. Žižňovský, *Contrib. Astron. Obs. Skalnaté Pleso* 27(3), 304-308 (1998)
4. Kupka, F., Piskunov, N.E., *CP star atmospheres based on individual ODFs*, in *Europ. Work. Group for CP stars, 26<sup>th</sup> Workshop*, eds. P. North, J. Žižňovský, *Contrib. Astron. Obs. Skalnaté Pleso* 27(3), 228-232 (1998)
5. Smalley, B., Kupka, F., *The effects of convection on the colours of A and F stars*, in *Europ. Work. Group for CP stars, 26<sup>th</sup> Workshop*, eds. P. North, J. Žižňovský, *Contrib. Astron. Obs. Skalnaté Pleso* 27(3), 233-237 (1998)
6. Kupka, F., *Computing solar and stellar overshooting with turbulent convection models. First tests of a fully non-local model.*, in *Theory and Tests of Convection in Stellar Structure*, eds. A. Gimenez, E.F. Guinan and B. Montesinos, *ASP Conf. Ser.* 173, 157-170, San Francisco (1999)
7. Weiss, W.W., Kupka, F., *Convection in Main Sequence Stellar Atmospheres*, in *Theory and Tests of Convection in Stellar Structure*, eds. A. Gimenez, E.F. Guinan and B. Montesinos, *ASP Conf. Ser.* 173, 21-30, San Francisco (1999)
8. Kupka, F., Ryabchikova, T.A., Piskunov, N.E., Stempels, H.C., Weiss, W.W., *VALD-2 - The new Vienna Atomic Line Data Base*, *Baltic Astronomy* 9(4), 590-594 (2000)
9. Kupka, F., *Turbulent convection: comparison of Reynolds stress models with numerical simulations*, *Proceedings of the COROT/SWG Milestone 2000 meeting*, eds. E. Michel, A. Hui-Bon-Hoa, Paris, in print (2001)  
(<http://www.lesia.obspm.fr/projets/corotswg/MilestoneProc/MilestoneFKa.ps>)
10. Kupka, F., Bruntt, H., *Using TEMPLOGG for determining stellar parameters of MONS targets*, 39-46, *Proceedings of the First COROT/MONS/MOST Ground-based Support Workshop*, ed. C. Sterken, University of Brussels (2001)
11. Kupka, F., Lüftinger, T., *TEMPLOGG – determination of stellar parameters*, *Proceedings of the COROT/SWG Milestone 2000 meeting*, eds. E. Michel, A. Hui-Bon-Hoa, Paris, in print (2001)  
(<http://www.lesia.obspm.fr/projets/corotswg/MilestoneProc/MilestoneFKc.ps>)
12. Kupka, F., Montgomery, M.H., *Non-local convection using the Reynolds stress approach;  $\delta$  Scuti type stars.*, *Proceedings of the COROT/SWG Milestone 2000 meeting*, ed. E. Michel, A. Hui-Bon-Hoa, Paris, in print (2001)  
(<http://www.lesia.obspm.fr/projets/corotswg/MilestoneProc/MilestoneFKb.ps>)

13. Garrido, R., Claret, A., Moya, A., Kupka, F., Heiter, U., Barban, C., Goupil, M.-J., van 't Veer-Menneret, C., *Colors in Eddington: Implications for mode identification*, Proc. 1st Eddington workshop “Stellar Structure and Habitable Planet Finding”, Cordoba, Spain 11–15 June 2001 (ESA SP-485, Noordwijk: ESA Publications Division), eds. F. Favata, I.W. Roxburgh, D. Galadi, 103-107 (2002)
14. Garrido, R., Moya, A., Goupil, M.-J., Barban, C., van 't Veer-Menneret, C., Kupka, F., Heiter, U., *Mode identification using the exoplanetary camera*, Papers from the Vienna COROT meeting, Comm. in Asteroseismology 141, 48-50 (2002)
15. Kupka, F., *Convection in A stars*, in *International Conference on magnetic fields in O, B and A stars*, eds. L.A. Balona, H.F. Henrichs and R. Medupe, ASP Conf. Ser. Vol. 305, 190-198 (2003)
16. Kupka, F., *Non-local convection models for stellar atmospheres and envelopes*, in *Modelling of Stellar Atmospheres*, IAU Symposium 210, eds. N.E. Piskunov, W.W. Weiss and D.F. Gray, 143-156 (2003)
17. Kupka, F., *Convection in stars*, in *The A-Star Puzzle*, IAU Symposium 224, eds. J. Zverko, W.W. Weiss, J. Žižňovský and S.J. Adelman, 119-129 (2004)
18. Kupka, F., *Turbulent convection in astrophysics and geophysics — a comparison*, in *Proceedings of the Workshop on “Interdisciplinary Aspects of Turbulence”*, Proceedings MPA/P15, eds. F. Kupka, W. Hillebrandt, 141-148 (2005)
19. Kupka, F., *Direct Simulations of Radiative and Convective Zones*, in *Element Stratification in Stars: 40 Years of Atomic Diffusion*, eds. G. Alecian, O. Richard and S. Vauclair, EAS Publications Series, Vol. 17, 177-186 (2005)
20. Samadi, R., Belkacem, K., Goupil, M.-J., Kupka, F., Dupret, M.-A., *Solar-like oscillation amplitudes and line-widths as a probe for turbulent convection in stars*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 349-357 (2007)
21. Kupka, F., *Shear Driven Turbulence and Coherent Structures in Solar Surface Simulations*, in *The Art of Modelling Stars in the 21st Century*, IAU Symposium 252, eds. L. Deng and K.L. Chan, 451-461 (2008)
22. Kupka, F., Belkacem, K., Goupil, M.-J., Samadi, R., *Using p-mode excitation rates for probing convection in solar-like stars*, in *Proceedings of the JENAM 2008 Symposium N°4: Asteroseismology and Stellar Evolution*, eds. S. Schuh and G. Handler, Comm. in Asteroseimology 159, 24-26 (2009)
23. Kupka, F., *3D Stellar Atmospheres for Stellar Structure Models and Asteroseismology*, Memorie della Società Astronomica Italiana, vol. 80, 701-710 (2009)
24. Rixon, G., et al. (with 43 co-authors including F. Kupka), *VAMDC – The Virtual Atomic and Molecular Data Centre – A New Way to Disseminate Atomic and Molecular Data - VAMDC Level 1 Release*, in *7th International Conference on Atomic and Molecular Data and Their Applications – ICAMDATA–2010*, AIP Conf. Proc. 1344, 107-115 (2011)

25. Muthsam, H.J., Kupka, F., Mundprecht, E., Zaussinger, F., Grimm-Strele, H., Happenhofer, N., *Simulations of stellar convection, pulsation and semiconvection*, in *Astrophysical Dynamics: From Stars to Galaxies*, IAU Symposium 271, eds. N.H. Brummell, A.S. Brun, M.S. Miesch and Y. Ponty, 179-186 (2011)
26. Muthsam, H.J., Kupka, F., *Multidimensional modelling of classical pulsating stars*, in *RRL2015 – High-Precision Studies of RR Lyrae Stars*, eds. L. Szabados, R. Szabó and K. Kinemuchi, No. 105 (Vol. 14, Part 1), Comm. Konkoly Observ. of the Hungarian Acad. Sci., 117-124 (2016)
27. Kupka, F., Belkacem, K., Samadi, R., Deheuvels, S., *Studying p-mode damping and the surface effect with hydrodynamical simulations*, in *Second BRITE-Constellation Science Conference – Small satellites – big science*, eds. K. Zwintz and E. Poretti, Proceedings of the Polish Astronomical Society, Vol. 5, 222–227 (2017)

## 1.6 Kurzberichte, Konferenzposter, elektronisch publizierte Konferenzvorträge

1. Kupka, F., Ryabchikova, T.A., Bologova, G., Kuschnig, R., Weiss, W.W., Mathys, G., *Abundance analysis of cool oscillating CP2 stars*, in *Chemically Peculiar and Magnetic Stars, on and close to the Upper Main Sequence*, 130-136, eds. J. Zverko, J. Žižňovský, Astron. Inst. Slovak Academy of Sciences (1994)
2. Muthsam, H.J., Göb, W., Kupka, F., Liebich, W., Zöchling, J., *The Interaction of Convection Zones*, in *Solar Magnetic Fields*, 152-154, eds. M. Schüssler and W. Schmidt, Cambridge University Press, Cambridge (1994)
3. Kupka, F., Gelbmann, M., Heiter, U., Kuschnig, R., Weiss, W.W., Ryabchikova, T.A., *Fine Analysis of Pulsating CP Stars*, in *Astrophysical Applications of Stellar Pulsation*, IAU Colloquium 155, 317-318, eds. R.S. Stobie, P.A. Whitelock, Astron. Soc. Pacific Conf. Ser. Vol. 83, San Francisco (1995)
4. Paunzen, E., Gelbmann, M., Heiter, U., Kupka, F., Kuschnig, R., Weiss, W.W., *The evolutionary status of lambda Bootis stars*, in *Astrophysical Applications of Stellar Pulsation*, IAU Colloquium 155, 315-316, eds. R.S. Stobie, P.A. Whitelock, Astron. Soc. Pacific Conf. Ser. Vol. 83, San Francisco (1995)
5. Piskunov, N.E., Kupka, F., Ryabchikova, T.A., Weiss, W.W., Jeffery, C.S., *The Vienna Atomic Line Data Base*, in *Workshop on Laboratory and astronomical high resolution spectra*, eds. A.J. Sauval, R. Blomme and N. Grevesse, ASP Conf. Ser. Vol. 81, 610-612, San Francisco (1995)
6. Griffin, R.E.M., Kupka, F., *Introduction*, in *M.A.S.S. - Model Atmospheres and Spectrum Synthesis*, eds. S.J. Adelman, F. Kupka and W.W. Weiss, ASP Conf. Ser. Vol. 108, 299, San Francisco (1996)
7. Ryabchikova, T., Piskunov, N., Savanov, I., Kupka, F., *Eu III identification and Eu abundance in cool CP stars*, in *Europ. Work. Group for CP stars, 26<sup>th</sup> Workshop*, eds. P. North, J. Žižňovský, Contrib. Astron. Obs. Skalnaté Pleso 27(3), 359-361 (1998)

8. Cowley, C.R., Kupka, F., Mathys, G., *Line Blanketing in Przybylski's Star*, American Astronomical Society Meeting 195, #50.02, Bulletin of the AAS 31, 1447 (1999)
9. Gardiner, R., Smalley, B., Kupka, F., *Testing convection theories using Balmer line profiles of A, F, and G stars*, in *Theory and Tests of Convection in Stellar Structure*, eds. A. Gimenez, E.F. Guinan and B. Montesinos, ASP Conf. Ser. 173, 213-216, San Francisco (1999)
10. Weiss, W.W., Ryabchikova, T.A., Kupka, F., Lüftinger, T.R., Savanov, I.S., Malashenko, V., *Spectroscopic Survey of Rapidly Oscillating Ap Stars*, in *The Impact of Large Scale Surveys on Pulsating Star Research*, eds. L. Szabados and D.W. Kurtz, IAU Coll. 176, ASP Conf. Ser. 203, 487-488 San Francisco (2000)
11. Montalbán, J., D'Antona, F., Kupka, F., Schmidt, W., *A new project for theoretical colors of globular cluster stars*, in *Cosmic Evolution*, 243-244, eds. E. Vangioni-Flam, R. Ferlet and M. Lemoine, World Scientific, New Jersey (2001)
12. Heiter, U., Kupka, F., Samadi, R., Barban C., van 't Veer-Menneret, C., Lebreton, Y., Goupil, M.-J., Garrido, R., Weiss, W.W., *Application of new ATLAS9 model atmosphere grids*, in *Modelling of Stellar Atmospheres*, IAU Symposium 210, eds. N.E. Piskunov, W.W. Weiss and D.F. Gray, E10 (CD-ROM), 1-9 (2003)
13. Knoglinger, P., Nesvacil, N., Kupka, F., Mittermayer, P., Piskunov, N., Weiss, W.W., Bruntt, H., *Tools and Methods for Abundance Analysis*, in *Modelling of Stellar Atmospheres*, IAU Symposium 210, eds. N.E. Piskunov, W.W. Weiss and D.F. Gray, E66 (CD-ROM), 1-3 (2003)
14. Landstreet, J.D., Kochukhov, O., Kupka, F., Rybachikova, T., Weiss, W.W., *Observations of rapid radial velocity variations of spectral lines in rapidly oscillating Ap (roAp) stars*, in *Asteroseismology Across the HR Diagram*, ISBN 1402011733, eds. M.J. Thompson, M.S. Cunha, M.J.P.F.G. Monteiro, Kluwer Academic Publishers, Dordrecht, P347-P350 (CD-ROM) (2003)
15. Montalbán, J., D'Antona, F., Kupka, F., *Problems and difficulties in building up stellar models with non-grey boundary conditions*, IAU Symposium 210, eds. N.E. Piskunov, W.W. Weiss and D.F. Gray, C6 (CD-ROM), 1-3 (2003)
16. Montalbán, J., Kupka, F., D'Antona, F., Heiter, U., *Pre-Main Sequence and Main Sequence models using the Vienna grids of ATLAS9 atmospheres*, in *Modelling of Stellar Atmospheres*, IAU Symposium 210, eds. N.E. Piskunov, W.W. Weiss and D.F. Gray, C5 (CD-ROM), 1-12 (2003)
17. Nendwich, J., Nesvacil, N., Weiss, W.W., Heiter, U., Kupka, F., *Colors of ATLAS9 Atmospheres and their Interpolation*, in *Modelling of Stellar Atmospheres*, IAU Symposium 210, eds. N.E. Piskunov, W.W. Weiss and D.F. Gray, A9 (CD-ROM), 1-5 (2003)
18. Smalley, B., Kupka, F., *Using Balmer line profiles to investigate convection in A and F stars*, in *Modelling of Stellar Atmospheres*, IAU Symposium 210, eds. N.E. Piskunov, W.W. Weiss and D.F. Gray, C10 (CD-ROM), 1-11 (2003)

19. Kupka, F., Landstreet, J.D., Sigut, A., Bildfell, C., Ford, A., Officer, T., Silaj, J., Townshend, A., *Observational signatures of atmospheric velocity fields in main sequence stars*, in *The A-Star Puzzle*, IAU Symposium 224, eds. J. Zverko, W.W. Weiss, J. Žižňovský and S.J. Adelman, 573-579 (2004)
20. Samadi, R., Goupil, M.-J., Lebreton, Y., van't-Veer, C., Kupka, F., *Effect of Local Treatments of Convection upon the Solar P-Mode Excitation Rates*, in *Helio- and Asteroseismology: Towards a Golden Future, Proc. of the SOHO 14 / GONG 2004 Workshop, New Haven, CT, USA*, eds. D. Danesy, ESA SP-559, 611-614 (2004)
21. Stütz, C., Kupka, F., *Stellar model atmospheres with emphasis on velocity dynamics*, in *The A-Star Puzzle*, IAU Symposium 224, eds. J. Zverko, W.W. Weiss, J. Žižňovský and S.J. Adelman, 570-572 (2004)
22. Silaj, J., Townshend, A., Kupka, F., Landstreet, J., Sigut, A., *Spectrum Synthesis of Sharp-Line B, A and F stars*, in *Element Stratification in Stars: 40 Years of Atomic Diffusion*, eds. G. Alecian, O. Richard and S. Vauclair, EAS Publications Series, Vol. 17, 345-348 (2005)
23. Barban, C., Goupil, M.-J., van't Veer-Menneret, C., Garrido, R., Heiter, U., Kupka, F., *Limb-darkening coefficients for the purpose of pulsation mode identification for A-F stars.*, in *Memorie della Societa' Astronomica Italiana*, Vol. 77, 101-102 (2006)
24. Belkacem, K., Samadi, R., Goupil, M.-J., Kupka, F., Baudin, F., *Excitation of solar p-modes. Effect of the asymmetry of the convection zone*, in SF2A-2006: Semaine de l'Astrophysique Française, meeting held in Paris, France, June 26-30, 2006, eds. D. Barret, F. Casoli, T. Contini, G. Lagache, A. Lecavelier and L. Pagani, 523-526 (2006)
25. Belkacem, K., Samadi, R., Goupil, M.-J., Kupka, F., Baudin, F., *A closure model for turbulent convection: application to the excitation of p modes*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 376-378 (2007)
26. Belkacem, K., Samadi, R., Goupil, M.-J., Kupka, F., Dupret, M.-A., *Two-scale mass-flux closure models for turbulence: p-mode amplitudes in solar-like stars*, in *Proceedings of the Vienna Workshop on the Future of Asteroseismology*, eds. G. Handler and G. Houdek, Comm. in Asteroseimology 150, 153-154 (2007)
27. Heiter, U., Smalley, B., Stütz, Ch., Kupka, F., Kochukhov, O., *Eclipsing binaries as a test for synthetic photometry*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 169-171 (2007) (abstract also appeared in IAU Symposium 240, eds. W.I. Hartkopf, E.F. Guinan and P. Harmanec, p. 328, 2007)
28. Kupka, F., *Some open questions concerning the modelling of non-locality in Reynolds stress type models of stellar convection*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 92-94 (2007)
29. Kupka, F., Muthsam, H.J., *Probing Reynolds stress models of convection with numerical simulations: I. Overall properties: fluxes, mean profiles*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 80-82 (2007)

30. Kupka, F., Muthsam, H.J., *Probing Reynolds stress models of convection with numerical simulations: II. Non-locality and third order moments*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 83-85 (2007)
31. Kupka, F., Muthsam, H.J., *Probing Reynolds stress models of convection with numerical simulations: III. Compressibility modelling and dissipation*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 86-88 (2007)
32. Kupka, F., Robinson, F.J., *Coherent structures in granulation convection and their importance for higher order closure models*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 74-76 (2007)
33. Montalbán, J., Nendwich, J., Heiter, U., Kupka, F., Paunzen, E., Smalley, B., *Effect of the microturbulence parameter on the Color-Magnitude Diagram*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 166-168 (2007)
34. Muthsam, H.J., Löw-Baselli, B., Obertscheider, Chr., Langer, M., Lenz, P., Kupka, F., *Modelling of solar granulation*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 89-91 (2007)
35. Roxburgh, I.W., Kupka, F., *Reynolds stress models of convection in convective cores*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 77-79 (2007)
36. Roxburgh, I.W., Kupka, F., *Mixing length model of convection in stellar cores*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F. Kupka, I.W. Roxburgh and K.L. Chan, 98-99 (2007)
37. Heiter, U., Barklem, P., Fossati, L., Kildiyarova, R., Kochukhov, O., Kupka, F., Obbrugger, M., Piskunov, N., Plez, B., Ryabchikova, T., Stempels, H. C., Stütz, Ch., Weiss, W.W., *VALD – an atomic and molecular database for astrophysics*, in *Journal of Physics: Conference Series*, Vol. 130, Issue 1, pp. 012011 (2008) (4 pages)
38. Kupka, F., Muthsam, H.J., *Analysing the Contributions in Moment Equations of Reynolds Stress Models of Convection with Numerical Simulations*, in *The Art of Modelling Stars in the 21st Century*, IAU Symposium 252, eds. L. Deng and K.L. Chan, 463-464 (2008)
39. Obbrugger, M., Heiter, U., Kupka, F., Lüftinger, T., Nesvacil, N., Piskunov, N., Ryabchikova, T.A., Stempels, H.C., Stütz, Ch., Weiss, W.W., *Vald*, in *Astronomical Spectroscopy and Virtual Observatory*, Proceedings of the EURO-VO Workshop, eds. M. Guainazzi and P. Osuna, published by the European Space Agency, 215-216 (2008)
40. Kupka, F., Fabbian, D., Krüger, D., Kostogryz, N., Gizon, L., *On long-duration 3D simulations of stellar convection using ANTARES*, in *Astronomy in Focus*, Volume 1, XXXth IAU General Assembly, eds. G. Kopp, A. Shapiro, 373–376 (2020)
41. Kupka, F., *On the Potential of the Reynolds Stress Approach to Model Convective Overshooting in Grids of Stellar Evolution Models*, in *Plato Mission Conference 2021*, Presentations

and posters of the online PLATO Mission Conference 2021, id.88 (2021), electronically freely accessible at <https://doi.org/10.5281/zenodo.5572778>

42. Fabbian, D., Caldiroli, A., Kupka, F., Montgomery, M.H., Muthsam, H.J., *Simulations of F- to A-type main-sequence and sub-giant stars*, held at *PLATO Stellar Science Conference 2023, Milazzo (Italy)*, online at <https://plato-stesci2023.sciencesconf.org>, id. 48. Slides available at <https://dx.doi.org/10.5281/zenodo.8138223>
43. Caldiroli, A., Fabbian, D., Kupka, F., Montgomery, M.H., Muthsam, H.J., *RHD simulation of convection in bright F-type stars*, held at *PLATO Stellar Science Conference 2023, Milazzo (Italy)*, online at <https://plato-stesci2023.sciencesconf.org>, id. 21. Slides available at <https://dx.doi.org/10.5281/zenodo.8108227>
44. Kupka, F., *Recent Theoretical Advances about Core Overshooting and Convective Penetration from a Convective Envelope*, held at *PLATO Stellar Science Conference 2023, Milazzo (Italy)*, online at <https://plato-stesci2023.sciencesconf.org>, id. 19. Slides available at <https://dx.doi.org/10.5281/zenodo.10426053>

## 1.7 Vorsitz bei Plenardiskussionen

1. Kupka, F., *Panel discussion section I*, in *The A-Star Puzzle*, IAU Symposium 224, eds. J.Zverko, W.W.Weiss, J.Žižňovský and S.J.Adelman, 465-471 (2004)
2. Kupka, F., *Round table discussion of session A: modelling convection and radiative transfer*, in *Convection in Astrophysics*, IAU Symposium 239, eds. F.Kupka, I.W.Roxburgh and K.L.Chan, 64-67 (2007)

## 1.8 Technische Berichte

1. Koch, O., Kupka, F., Löw-Baselli, B., Mayrhofer, A., Zaussinger, F., *SDIRK Methods for the ANTARES Code*, ASC Report 32/2010, ISBN 978-3-902627-03-2, Institute for Analysis and Scientific Computing, Vienna University of Technology, Wien (2010) (<http://www.asc.tuwien.ac.at/preprint/2010/asc32x2010.pdf>)
2. Happenhofer, N., Koch, O., Kupka, F., *IMEX Methods for the ANTARES Code*, ASC Report 27/2011, ISBN 978-3-902627-04-9, Institute for Analysis and Scientific Computing, Vienna University of Technology, Wien (2011) (<http://www.asc.tuwien.ac.at/preprint/2011/asc27x2011.pdf>)
3. Higuera, I., Happenhofer, N., Koch, O., Kupka, F., *Optimized IMEX Runge-Kutta Methods for Simulations in Astrophysics: A Detailed Study*, ASC Report 14/2012, ISBN 978-3-902627-05-6, Institute for Analysis and Scientific Computing, Vienna University of Technology, Wien (2012) (<http://www.asc.tuwien.ac.at/preprint/2012/asc14x2012.pdf>)

## 1.9 ArXiv Vordrucke

1. Blies, P., Kupka, F., Zaussinger, F., Hollerbach, R., *The effects of rotation on a double-diffusive layer in a rotating spherical shell*, (2014), preprint at <http://arxiv.org/abs/1404.6086>

## 1.10 Zusammenfassungen für Konferenzen

1. Kupka, F., *The hydrodynamic moment equations: an alternative treatment for stellar convection*, Publ. Astron. Obs. Belgrade 65, 13 (1999)
2. Kupka, F., Ryabchikova, T.A., *VALD – The Vienna Atomic Line Data Base: a survey*, Publ. Astron. Obs. Belgrade 65, 223 (1999)
3. Mason, N.J., et al. (with 13 co-authors including F. Kupka), *VAMDC: The Virtual Atomic and Molecular Data Centre: a Service Orientated Data Infrastructure for e-Research*, European Planetary Science Congress 2010, EPSC Abstracts Vol. 5, EPSC2010-861 (2010) (2 pages)
4. Zaussinger, F., Kupka, F., Muthsam, H.J., Happenhofer, N., Grimm-Strele, H., *Layered convection in double diffusive fluids*, EGU General Assembly 2012, Geophysical Research Abstracts Vol. 14, EGU2012-1830 (2012)

## 1.11 Formelle Arbeitsgruppenberichte

1. Cunha, M.S., Weiss, W.W., Dworetsky, M.M., Kochukhov, O., Kupka, F., Leblanc, F., Monier, R., Paunzen, E., Piskunov, N.E., Shibahashi, H., Smalley, B., Ziznovsky, J., *Inter-Division IV-V / Working Group Ap and Related Stars*, in *Transactions IAU*, Vol. 4, Issue 27A, Reports on Astronomy 2006-2009, ed. K. van der Hucht, 245-248 (2009)
2. Cunha, M.S., Weiss, W.W., Dworetsky, M.M., Kochukhov, O., Kupka, F., Leblanc, F., Monier, R., Paunzen, E., Piskunov, N.E., Shibahashi, H., Smalley, B., Ziznovsky, J., *Inter-Division IV-V / Working Group Ap and Related Stars*, in *Transactions IAU*, Vol. 6, Issue T27, Transactions IAU, 205-206 (2010)
3. Mathys, G., Cunha, M., Dworetsky, M., Kochukhov, O., Kupka, F., LeBlanc, F., Monier, R., Paunzen, E., Pintado, O., Piskunov, N., Ziznovsky, J., *Inter-Division IV-V / Working Group Ap and Related Stars*, in *Transactions IAU*, Vol. 7, Issue T28A, Transactions IAU, 203-206 (2012)