

We recommend the papers \cite{0878.35061,0861.35046,0874.49033}, \cite{0861.35046} for a first reading and \cite{trudinger:hessian}, \cite{0846.39007}, \cite{0874.49033}, \cite{0818.49023} as well as \cite{struwe:ym-local} for further studies. The paper \cite{struwe:ym-local} is especially interesting.

\nocite{0878.35061,0861.35046,trudinger:hessian,0846.39007,0874.49033,0818.49023,0831.53066,0925.58107,01638565,0842.53067,kvv95,yunmei:1994,helgason:ga,truwe:ym-local,Korotkii:1994pu,kuenzle:cmp,cavaglia,Page:1994pp,MR1252814,0829.49027,0980.32500,0872.35032,0796.35045,0867.35027,0852.35058,0839.35060,0900.35120,0826.35058,0859.52001,0855.26006,0828.35020,0823.35059,0823.35026,0812.58016,0820.35083,Polchinski:string,0853.57031,0864.53070,0850.53031,01613491,01410620,0264-9381-10-4-015,MR1361196,Bento:1992wy,Ryan:1993vr,cg:kleineZeiten,schneider:book,0840.53046,0846.35043,0787.65059,0913.58006,0848.58012,0819.53029,0849.53008,0850.83037,01477561,0791.58090,0990.81761,rade,kd,0847.35043,0836.53004,0811.53010,0745.65058,0805.35022,0850.83039,Burd1991679,Bertolami:1990je,kuenzle:cqg8,Bertolami:1991cf,urbas:convex,0772.35026,0771.35014,0732.35031,0747.58024}

We recommend the papers [36, 24, 65], [24] for a first reading and [70], [44], [65], [64] as well as [66] for further studies. The paper [66] is especially interesting.

References

- [1] Warren G. Anderson, Patrick R. Brady, Werner Israel, and Sharon M. Morsink, *Quantum effects in black hole interiors.*, Phys. Rev. Lett. **70** (1993), no. 8, 1041–1044.
- [2] M. C. Bento, O. Bertolami, P. V. Moniz, J. M. Mourao, and P. M. Sa, *On the cosmology of massive vector fields with $SO(3)$ global symmetry*, Class. Quant. Grav. **10** (1993), 285–298.
- [3] O. Bertolami and J. M. Mourao, *The Ground state wave function of a radiation dominated universe*, Class. Quant. Grav. **8** (1991), 1271–1282.
- [4] O. Bertolami, J. M. Mourao, R. F. Picken, and I. P. Volobuev, *Dynamics of euclidenized Einstein Yang-Mills systems with arbitrary gauge groups*, Int. J. Mod. Phys. **A6** (1991), 4149–4180.
- [5] A. Bonanno, S. Droz, W. Israel, and S.M. Morsink, *Structure of the charged spherical black hole interior.*, Proc. R. Soc. Lond., Ser. A **450** (1995), no. 1940, 553–567.
- [6] Alfio Bonanno, Serge Droz, Werner Israel, and Sharon Morsink, *The internal evolution of black holes.*, Can. J. Phys. **72** (1994), no. 11-12, 755–759.
- [7] Alfio Bonanno, Serge Droz, Werner Israel, and Sharon M. Morsink, *Black holes: The inside story.*, Helv. Phys. Acta **67** (1994), no. 6, 626–631.
- [8] A.B. Burd and James E. Lidsey, *Analysis of inflationary models driven by vector fields*, Nuclear Physics B **351** (1991), no. 3, 679 – 694.
- [9] Marco Cavaglia and Vittorio de Alfaro, *On a quantum universe filled with Yang-Mills radiation*, Mod. Phys. Lett. **A9** (1994), 569–578.
- [10] Tze-Dan Chung and Herman Verlinde, *Dynamical moving mirrors and black holes.*, Nucl. Phys. B **418** (1994), no. 1-2, 305–336.
- [11] Keith Devlin, *The joy of sets*, Springer-Verlag, New-York-Berlin-Heidelberg, 1992.
- [12] Claus Gerhardt, *Existenz für kleine Zeiten*, 1993, Lecture Note.
- [13] Binxin Guan and An Wang, *The Bergman kernel function and full group of holomorphic automorphisms on a Reinhardt domain.*, Chin. Q. J. Math. **9** (1994), no. 3, 82–87.
- [14] Bo Guan, *The Dirichlet problem for a class of fully nonlinear elliptic equations.*, Commun. Partial Differ. Equations **19** (1994), no. 3-4, 399–416.
- [15] Bo Guan and Joel Spruck, *Interior gradient estimates for solutions of prescribed curvature equations of parabolic type.*, Indiana Univ. Math. J. **40** (1991), no. 4, 1471–1481.
- [16] ———, *Boundary-value problems on S^n for surfaces of constant Gauss curvature.*, (1993).
- [17] Sigurdur Helgason, *Geometric analysis on symmetric spaces*, Mathematical surveys and monographs; 39, American Math. Soc., 1994.
- [18] Gerhard Huisken, *Singularity formation in geometric evolution equations.*, Theoretical and numerical aspects of geometric variational problems, Proc. Workshop, Canberra/Australia 1990, Proc. Cent. Math. Anal. Aust. Natl. Univ. **26**, 128-139 , 1991.
- [19] ———, *Local and global behaviour of hypersurfaces moving by mean curvature.*, Greene, Robert (ed.) et al., Differential geometry. Part 1: Partial differential equations on manifolds. Proceedings of a summer research institute, held at the University of California, Los Angeles, CA, USA, July 8-28, 1990. Providence, RI: American Mathematical Society. Proc. Symp. Pure Math. **54**, Part 1, 175-191 , 1993.
- [20] Werner Israel, *Black holes: The inside story.*, Janis, Allen I. (ed.) et al., Recent advances in general relativity. Essays in honor of Ted Newman. Boston, MA: Birkhäuser Verlag. Einstein Stud. **4**, 103-126 , 1992.
- [21] ———, *Classical and quantum dynamics of black hole interiors.*, Hu, B. L. (ed.) et al., Directions in general relativity. Proceedings of the international symposium held at the University of Maryland, College Park, MD, USA, May 27-29, 1993. Papers in honor of Charles Misner on the occasion of his 60th birthday. Vol. 1. Cambridge: Cambridge University Press. 182-200 , 1993.
- [22] ———, *The internal geometry of black holes.*, Beem, John K. (ed.) et al., Differential geometry and mathematical physics. AMS-CMS special session on geometric methods in mathematical physics, August 15-19, 1993, Vancouver, British Columbia, Canada. Providence, RI: American Mathematical Society. Contemp. Math. **170**, 155-165 , 1994.
- [23] N. Ivochkina and O. Ladyzhenskaya, *On parabolic problems generated by some symmetric functions of the eigenvalues of the Hessian.*, Topol. Methods Nonlinear Anal. **4** (1994), no. 1, 19–29.
- [24] ———, *Estimation of the second derivatives for surfaces evolving under the action of their principal curvatures.*, Topol. Methods Nonlinear Anal. **6** (1995), no. 2, 265–282.
- [25] N.M. Ivochkina, *The Dirichlet problem for the equations of curvature of order m .*, Leningr. Math. J. **2** (1991), no. 3, 631–654.
- [26] ———, *An optimal property of ℓ -minimal surfaces in viscosity interpretation.*, J. Math. Sci., New York **77** (1992), no. 3, 3183–3189.

- [27] ———, *The Dirichlet principle in the theory of equations of Monge-Ampère type.*, St. Petersburg. Math. J. **4** (1992), no. 6, 1169–1189.
- [28] ———, *Viscosity approach to the optimal property of ℓ -minimal surfaces.*, Zap. Nauchn. Semin. POMI **200** (1992), 71–82.
- [29] ———, *The variational principle and completely nonlinear second order equations.*, (1993).
- [30] ———, *On conditions of solvability of the Dirichlet problem for the equation of curvature of order m .*, Zap. Nauchn. Semin. POMI **213** (1994), 66–74.
- [31] ———, *On solvability conditions of the Dirichlet problem for m -curvature equations.*, J. Math. Sci., New York **84** (1994), no. 1, 856–861.
- [32] ———, *The variational principle and completely nonlinear second-order equations.*, Ladyzhenskaya, O. A. (ed.), Proceedings of the St. Petersburg Mathematical Society. Volume II. Transl. ed. by Simeon Ivanov. Providence, RI: American Mathematical Society. Transl., Ser. 2, Am. Math. Soc. 159, 145–162, 1994.
- [33] N.M. Ivochkina and O.A. Ladyzhenskaya, *On parabolic equations generated by symmetric functions of eigenvalues of the Hessian or by the principal curvatures of a surface. I: Parabolic Monge-Ampère equations.*, Algebra Anal. **6** (1994), no. 3, 141–160.
- [34] ———, *On parabolic equations generated by symmetric functions of the principal curvatures of the evolving surface, or of the eigenvalues of the Hessian. I: Monge-Ampère equations.*, St. Petersburg. Math. J. **6** (1994), no. 3, 575–594.
- [35] ———, *The first initial-boundary value problem for evolution equations generated by traces of order m of the Hessian of the unknown surface.*, Russ. Acad. Sci., Dokl., Math. **50** (1994), no. 1, 61–65.
- [36] ———, *The first initial boundary-value problem for evolution equations generated by symmetric functions of principal curvatures.*, Dokl. Math. **51** (1995), no. 1, 33–35.
- [37] N.M. Ivochkina, S.I. Prokof'eva, and G.V. Yakunina, *On a class of equations of Monge-Ampère type.*, J. Math. Sci., New York **73** (1992), no. 6, 663–673.
- [38] Youngjai Kiem, Herman Verlinde, and Erik Verlinde, *Black hole horizons and complementarity*, Phys. Rev. D (3) **52** (1995), no. 12, 7053–7065. MR 97c:83051
- [39] V. A. Korotkii and Yu. N. Obukhov, *Bianchi-IX cosmological models with rotation in general relativity theory*, Russ. Phys. J. **37** (1994), 909–914.
- [40] H P Künzle, *Su(n)-einstein-yang-mills fields with spherical symmetry*, Classical and Quantum Gravity **8** (1991), no. 12, 2283–2297.
- [41] H. P. Künzle, *Analysis of the static spherically symmetric su(n)-einstein-yang-mills equations*, Communications in Mathematical Physics **162** (1994), no. 2, 371–397.
- [42] H P Künzle and A K M Masood ul Alam, *Pure yang-mills fields on asymptotically flat curved r^3* , Classical and Quantum Gravity **10** (1993), no. 4, 801–804.
- [43] Hung-Ju Kuo and Neil S. Trudinger, *Discrete methods for fully nonlinear elliptic equations.*, SIAM J. Numer. Anal. **29** (1992), no. 1, 123–135.
- [44] ———, *Local estimates for parabolic difference operators.*, J. Differ. Equations **122** (1995), no. 2, 398–413.
- [45] Hung-Ju Kuo and N.S. Trudinger, *On the discrete maximum principle for parabolic difference operators.*, (1993).
- [46] Mi Lin and Neil S. Trudinger, *On some inequalities for elementary symmetric functions.*, Bull. Aust. Math. Soc. **50** (1994), no. 2, 317–326.
- [47] ———, *The Dirichlet problem for the prescribed curvature quotient equations.*, Topol. Methods Nonlinear Anal. **3** (1994), no. 2, 307–323.
- [48] Yousong Luo and Neil S. Trudinger, *Linear second order elliptic equations with Venttsel boundary conditions.*, (1991).
- [49] ———, *Quasilinear second order elliptic equations with Venttsel boundary conditions.*, Potential Anal. **3** (1994), no. 2, 219–243.
- [50] Hisashi Naito, *On the Yang-Mills heat flow*, Geometry and global analysis (Sendai, 1993), Tohoku Univ., Sendai, 1993, pp. 319–326. MR MR1361196 (97a:58039)
- [51] Thomas Nehring, *Eingebettete Lösungen eines Außenraumproblems für Minimalflächen vom Typ des Kreistrings. (Embedded solutions for an exterior minimal surface problem of annular type).*, Ph.D. thesis, Heidelberg: Naturwiss.-Math. Fak., Univ. Heidelberg, 61 S., 1993.
- [52] ———, *Embedded minimal annuli solving an exterior problem.*, Calc. Var. Partial Differ. Equ. **2** (1994), no. 4, 373–388.
- [53] Don N. Page, *Quantum cosmology lectures*, (1994).
- [54] Joseph Polchinski, *What is string theory?*, 1994, 153 pages..
- [55] Johan Råde, *On the Yang-Mills heat equation in two and three dimensions*, J. Reine Angew. Math. **431** (1992), 123–163. MR MR1179335 (94a:58041)
- [56] Jr. Ryan, Michael P., *Cosmological 'ground state' wave functions in gravity and electromagnetism*, (1993).
- [57] J. R. Sangwine-Yager, *A representation for volume involving interior reach*, Math. Ann. **298** (1994), no. 1, 1–5. MR MR1252814 (95a:52012)
- [58] Rolf Schneider, *Convex bodies: the Brunn-Minkowski theory*, Encyclopedia of Mathematics and its Applications, vol. 44, Cambridge University Press, Cambridge, 1993. MR MR1216521 (94d:52007)
- [59] Kareljan Schoutens, Herman Verlinde, and Erik Verlinde, *Black hole evaporation and quantum gravity.*, Halpern, M. B. (ed.) et al., Strings '93. Proceedings of the conference, Berkeley, CA, USA, May 24–29, 1993. Singapore: World Scientific. 22–49, 1995.
- [60] Leon Simon, *Cylindrical tangent cones and the singular set of minimal submanifolds.*, J. Differ. Geom. **38** (1993), no. 3, 585–652.
- [61] ———, *Existence of surfaces minimizing the Willmore functional.*, Commun. Anal. Geom. **1** (1993), no. 2, 281–326.

- [62] ———, *Theorems on the regularity and singularity of minimal surfaces and harmonic maps.*, Kotake, Takeshi (ed.) et al., Geometry and global analysis. Report of the 1st MSJ (Mathematical Society of Japan) International Research Institute, Sendai, Japan, July 12–23, 1993. Sendai: Tōhoku Univ., Mathematical Institute, 111–145, 1993.
- [63] ———, *Uniqueness of some cylindrical tangent cones.*, Commun. Anal. Geom. **2** (1994), no. 1, 1–33.
- [64] ———, *Rectifiability of the singular set of energy minimizing maps.*, Calc. Var. Partial Differ. Equ. **3** (1995), no. 1, 1–65.
- [65] ———, *Rectifiability of the singular sets of multiplicity 1 minimal surfaces and energy minimizing maps.*, Hsiung, C. C. (ed.) et al., Proceedings of the conference on geometry and topology held at Harvard University, Cambridge, MA, USA, April 23–25, 1993. Cambridge, MA: International Press. Surv. Differ. Geom., Suppl. J. Differ. Geom. 2, 246–305, 1995.
- [66] Michael Struwe, *The Yang-Mills flow in four dimensions*, Calc. Var. Partial Differential Equations **2** (1994), no. 2, 123–150. MR MR1385523 (97i:58034)
- [67] Neil S. Trudinger, *Isoperimetric inequalities and Monge-Ampère equations.*, Bakelman, I. R. (ed.) et al., A tribute to Ilya Bakelman. Proceedings of a conference, College Station, TX, USA, October 1993. College Station, TX: Texas A & M University. Discourses Math. Appl. 3, 43–46, 1994.
- [68] ———, *Isoperimetric inequalities for quermassintegrals.*, (1994).
- [69] ———, *Maximum principles for curvature quotient equations.*, J. Math. Sci., Tokyo **1** (1994), no. 3, 551–565.
- [70] ———, *On the Dirichlet problem for Hessian equations.*, Acta Math. **175** (1995), no. 2, 151–164.
- [71] John I. E. Urbas, *An expansion of convex hypersurfaces*, J. Differential Geom. **33** (1991), no. 1, 91–125. MR MR1085136 (91j:58155)
- [72] Erik Verlinde, *Black hole evaporation and complementarity.*, Iagolnitzer, Daniel (ed.), Proceedings of the XIth international congress on mathematical physics, Paris, France, July 18–23, 1994. Cambridge, MA: International Press. 668–673, 1995.
- [73] ———, *Global aspects of electric-magnetic duality.*, Nucl. Phys. B **455** (1995), no. 1–2, 211–225.
- [74] Erik Verlinde and Herman Verlinde, *A quantum S-matrix for two-dimensional black hole formation and evaporation.*, Nucl. Phys. B **406** (1993), no. 1–2, 43–58.
- [75] Chen Yunmei and Shen Chun-Li, *Monotonicity formula and small action regularity for yang-mills flows in higher dimensions*, Calculus of Variations and Partial Differential Equations **2** (1994/11/01/), no. 4, 389–403.