

LUIS A. CAFFARELLI

CURRENT POSITION

Professor of Mathematics and the Institute for Computational Engineering and Sciences
Sid W. Richardson Foundation Regents' Chair in Mathematics No. 1

PERSONAL DATA

Born:	December 8, 1948	Citizenship:	U.S. - Argentina
	Buenos Aires, Argentina	Address:	University of Texas at Austin
Married To:	Irene M. Gamba		Department of Mathematics
Children:	Alejandro, Nicolas, Mauro		Austin, Texas 78712
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EDUCATION

Ph.D., University of Buenos Aires, 1972
Masters of Science, University of Buenos Aires, 1968

PROFESSIONAL EXPERIENCE

1997- Professor of Mathematics and the Institute for Computational Engineering and Sciences
University of Texas at Austin
1994-97 Professor, Courant Institute - N.Y.U.
1986-96 Professor, Institute for Advanced Study - Princeton
1983-86 Professor, University of Chicago
1980-82 Professor, Courant Institute
1979-83 Professor, University of Minnesota
1977-79 Associate Professor, University of Minnesota
1975-77 Assistant Professor, University of Minnesota
1973-74 Postdoctoral, University of Minnesota

PROFESSIONAL SOCIETIES

Member, National Academy of Sciences
Member, American Academy of Arts and Sciences
Member, Academy of Medicine, Engineering and Science of Texas
Member, American Mathematical Society
Member, Pontifical Academy of Sciences
Member, Union Matematica Argentina
Foreign Member, Accademia Nazionale delle Scienze, Italy
Foreign Member, Accademia Nazionale dei Lincei, Italy
Foreign Member, Academia Nacional de Ciencias, Buenos Aires, and Cordoba
Foreign Member, Istituto Lombardo, Accademia di Scienze e Lettere, Italy

HONORS AND AWARDS

Rolf Schock Prize, Swedish Royal Academy of Science - 2005
Premio Konex Platino – Brillante – 2003
Doctor Honoris Causa: Universidad de San Luis – 2007
Doctor Honoris Causa: Ecole Normal Supérieure Paris - 2003
Doctor Honoris Causa: Universidad de la Plata Argentina - 2003
Doctor Honoris Causa: Universidad Autónoma de Madrid -1992
Fermi Lectures, Scuola Normale di Pisa -1998
Colloquium Lecturer – A.M.S., 1993
Pius XI Gold Medal -1988
Guggenheim Fellowship - 1985
Honorary Professor: Universidad de Buenos Aires; Universidad de Mar del Plata
Bocher Prize - 1984
Co-awarded Stampacchi Prize - 1982

SELECTED LECTURES

Plenary Lecture ICM 02: Beijing
ICIAM 07 Plenary Lecture: Zurich
Colloquium Lectures 1993: AMS
Plenary lecture AMS SMI: Pisa
Current Developments in Mathematics - Series of Lectures: Harvard University
Midwest PDE Seminar 25 anniversary: Fall/Northwestern and Spring/Univ of Illinois
Morse Lectures, IAS
Millennium Lectures: University of Washington
Lecture IPAM: In honor of Bjorn Engquist - International Forum on Multiscale Methods
& Partial Differential Equations: Los Angeles
Summer School: Pan American University, Texas
Winter Course: University of Buenos Aires, Argentina
Minicourse: Istituto di Alta Matematica, Italy
Minicourse: MRSI – Mathematical Research Institute: University of California, Berkeley
Summer CIME Course: Italy
Lecture at CBMS Board
Colloquia: MIT, Columbia, etc.
In honor of E. Magenes
In memory of J. L. Lions and G Stampacchia: Erice
In memory of Laurent Schwartz: Ecole Polytechnique
Congress to the memory of J L Lions: College de France
Heritage of R. Caccioppoli Acad Lincei
Invited Lecturer - Math into the XXI Century Series: AMS Centennial Celebration
Chemerda Lectures, Penn. State
D'atri Lectures, Rutgers University

ACCEPTED FOR PUBLICATION

Caffarelli, Luis; Huang, Qingbo: Reflector problem in $\mathbb{R}^n$ endowed with non-euclidean norm. Accepted for publication in the *Archive for Rational Mechanics and Analysis*.

Athanasopoulos, I.; Caffarelli, L.A.; Salsa, S.: The Structure of the Free Boundary for Lower Dimensional Obstacle Problems. Accepted for publication in the *American Journal of Mathematics*.

Caffarelli, Luis A.; Salsa, Sandro; Silvestre, Luis: Regularity estimates for the solution and the free boundary to the obstacle problem for the fractional Laplacian. Accepted for publication in *Inventiones mathematicae*.

Caffarelli, Luis; Gutierrez, C.E.; Huang, Qingbo: On the regularity of reflector antennas. Accepted for publication *Annals of Mathematics*.

Caffarelli, Luis A.; McCann, Robert: Free boundaries in optimal transport and Monge-Ampere obstacle problems. Accepted for publication in the *Annals of Mathematics*.

Caffarelli, Luis: Issues in homogenization of non divergence problems. Notes from the series of lectures delivered at the Harvard-MIT Current Developments in Mathematics Symposium to appear in *Journal of Differential Geometry* (2006).

PUBLICATIONS

1. Caffarelli, Luis A.; Souganidis, Panagiotis E.: A Rate of convergence for monotone finite difference approximations to fully nonlinear, uniformly elliptic PDEs. *Comm. Pure Appl. Math.* 61 (2008), no. 1, 1-17.
2. Caffarelli, Luis, A.; Guan, Pengfei; Ma, Xi-Nan: A Constant Rank Theorem for Solutions of Fully Nonlinear Elliptic Equations. *Comm. Pure Appl. Math.* 60 (2007), no. 12, 1769-1791.
3. Caffarelli, L.; Silvestre, L.: An extension problem related to the fractional Laplacian. Accepted for publication in *Comm. Partial Differential Equations* 32 (2007) No. 7-9, 1245-1260.
4. Cafferelli, L. A.; Lin, Fang Hua An optimal partition problem for eigenvalues. *J. Sci. Comput.* 31 (2007), no. 1-2, 5--18.
5. Caffarelli, Luis; Mellet, Antoine: Capillary drops on an inhomogeneous surface. *Contemp. Math.*, 446, Amer. Math. Soc., Providence, RI, 2007.
6. Caffarelli, L. A.; Mellet, A. Capillary drops: contact angle hysteresis and sticking drops. *Calc. Var. Partial Differential Equations* 29 (2007), no. 2, 141--160.
7. Caffarelli, L.; Lee, K. Homogenization of oscillating free boundaries: the elliptic case. *Comm. Partial Differential Equations* 32 (2007), no. 1-3, 149--162.
8. Caffarelli, L. A.; Lee, K.-A.; Mellet, A. Flame propagation in one-dimensional stationary ergodic media. *Math. Models Methods Appl. Sci.* 17 (2007), no. 1, 155—169.
9. Caffarelli, Luis A.; Roquejoffre, Jean-Michel. Uniform Hölder estimates in a class of elliptic systems and applications to singular limits in models for diffusion flames. *Arch. Ration. Mech. Anal.* 183 (2007), no. 3, 457--487.

10. • Caffarelli, Luis. Free Boundary Problems for Fractional Powers of the Laplacian. *Proceedings of the Congress Beltrami*: Instituto Lombardo, Italy. 39 (2006).
11. • Caffarelli, Luis; Manasevich, Raul; Rodrigues, Hildebrando; Yi, Yingfei Preface [Pan-American Advanced Studies Institute on Differential Equations and Nonlinear Analysis]. Held in Santiago, January 10--21, 2005. *J. Dynam. Differential Equations* 18 (2006), no. 3, 483--484.
12. Caffarelli, L.; Li, YanYan Some multi-valued solutions to Monge-Ampère equations. *Comm. Anal. Geom.* 14 (2006), no. 3, 411--441.
13. Caffarelli, Luis A.; Córdoba, Antonio: Phase transitions: uniform regularity of the intermediate layers. *J. Reine Angew. Math.* 593 (2006), 209--235.
14. Caffarelli, Luis A.; Wang, Lihe: A Harnack inequality approach to the interior regularity gradient estimates of geometric equations. *J. Partial Differential Equations* 19 (2006), no. 1, 16--25.
15. Caffarelli, L. A.; Lee, K.-A.; Mellet, A. Homogenization and flame propagation in periodic excitable media: the asymptotic speed of propagation. *Comm. Pure Appl. Math.* 59 (2006), no. 4, 501--525.
16. • Caffarelli, Luis; Salsa, Sandro: A geometric approach to free boundary problems. *Graduate Studies in Mathematics*, 68. American Mathematical Society, Providence, RI, 2005.
17. Caffarelli, Luis A.; de la Llave, Rafael: Interfaces of ground states in Ising models with periodic coefficients. *J. Stat. Phys.* 118 (2005), no. 3-4, 687--719.
18. Caffarelli, Luis A.; Souganidis, Panagiotis E.; Wang, L.: Homogenization of fully nonlinear, uniformly elliptic and parabolic partial differential equations in stationary ergodic media. *Comm. Pure Appl. Math.* 58 (2005), no. 3, 319--361.
19. Athanasopoulos, I.; Caffarelli, L. A.: Optimal regularity of lower dimensional obstacle problems. *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* 310 (2004), Kraev. Zadachi Mat. Fiz. i Smezh. Vopr. Teor. Funkts. 34, 49--66, 226.
20. Caffarelli, Luis A.; Jerison, David; Kenig, Carlos E.: Global energy minimizers for free boundary problems and full regularity in three dimensions. Noncompact problems at the intersection of geometry, analysis, and topology, 83--97, *Contemp. Math.*, 350, Amer. Math. Soc., Providence, RI, 2004.
21. Caffarelli, Luis; Petrosyan, Arshak; Shahgholian, Henrik: Regularity of a free boundary in parabolic potential theory. *J. Amer. Math. Soc.* 17 (2004), no. 4, 827--869 (electronic).
22. Caffarelli, Luis A.: The Monge Ampere equation and optimal transportation. Recent advances in the theory and applications of mass transport, 43--52, *Contemp. Math.*, 353, Amer. Math. Soc., Providence, RI, 2004.
23. Caffarelli, Luis A.; Lee, Ki-Ahm; Mellet, Antoine Singular limit and homogenization for flame propagation in periodic excitable media. *Arch. Ration. Mech. Anal.* 172 (2004), no. 2, 153--190.
24. Caffarelli, L.; Li, Yan Yan A Liouville theorem for solutions of the Monge-Ampère equation with periodic data. *Ann. Inst. H. Poincaré Anal. Non Linéaire* 21 (2004), no. 1, 97--120.
25. Caffarelli, Luis; Salazar, Jorge; Shahgholian, Henrik Free-boundary regularity for a problem arising in superconductivity. *Arch. Ration. Mech. Anal.* 171 (2004), no. 1, 115--128.
26. Caffarelli, Luis. Some Liouville theorems for PDE problems in periodic media. *Rend. Mat. Acc. Lincei* (9), 14, (2003) 247-255.
27. • Caffarelli, Luis The Monge-Ampère equation and optimal transportation, an elementary review. *Optimal transportation and applications (Martina Franca, 2001)*, 1-10, Lecture Notes in Math., 1813, Springer, Berlin, 2003.

28. • Ambrosio, L.; Caffarelli, L. A.; Brenier, Y.; Buttazzo, G.; Villani, C. Optimal transportation and applications. Lectures from the C.I.M.E. Summer School held in Martina Franca, September 2--8, 2001. Edited by Caffarelli and S. Salsa. Lecture Notes in Mathematics, 1813. *Springer-Verlag, Berlin; Centro Internazionale Matematico Estivo (C.I.M.E.), Florence*, 2003. viii+164 pp.
29. Cabré, Xavier; Caffarelli, Luis A. Interior $C^{2,\alpha}$ regularity theory for a class of nonconvex fully nonlinear elliptic equations. *J. Math. Pures Appl.* (9) 82 (2003), no. 5, 573-612.
30. Caffarelli, Luis A.; Huang, Qingbo Estimates in the generalized Campanato-John-Nirenberg spaces for fully nonlinear elliptic equations. *Duke Math. J.* 118 (2003), no. 1, 1-17.
31. Athanasopoulos, I.; Caffarelli, L. A.; Salsa, S. Stefan-like problems with curvature. *J. Geom. Anal.* 13 (2003), no. 1, 21-27.
32. Caffarelli, L.; Li, Yanyan An extension to a theorem of Jörgens, Calabi, and Pogorelov. *Comm. Pure Appl. Math.* 56 (2003), no. 5, 549-583.
33. Caffarelli, Luis A.; Jerison, David; Kenig, Carlos E. Some new monotonicity theorems with applications to free boundary problems. *Ann. of Math.* (2) 155 (2002), no. 2, 369-404.
34. Caffarelli, L.; Salazar, J. Solutions of fully nonlinear elliptic equations with patches of zero gradient: existence, regularity and convexity of level curves. *Trans. Amer. Math. Soc.* 354 (2002), no. 8, 3095-3115 (electronic).
35. Caffarelli, Luis A.; Roquejoffre, Jean-Michel A nonlinear oblique derivative boundary value problem for the heat equation: analogy with the porous medium equation. *Ann. Inst. H. Poincaré Anal. Non Linéaire* 19 (2002), no. 1, 41-80.
36. Caffarelli, Luis A. Erratum: "Monotonicity of optimal transportation and the FKG and related inequalities" [*Comm. Math. Phys.* 214 (2000), no. 3, 547--563; *Comm. Math. Phys.* 225 (2002), no. 2, 449-450].
37. Caffarelli, Luis A.; Feldman, Mikhail; McCann, Robert J. Constructing optimal maps for Monge's transport problem as a limit of strictly convex costs. *J. Amer. Math. Soc.* 15 (2002), no. 1, 1-26.
38. Cabré, Xavier; Caffarelli, Luis A. Regularity theory for a class of nonconvex fully nonlinear elliptic equations. XVII CEDYA: Congress on Differential Equations and Applications/VII CMA: Congress on Applied Mathematics (Spanish) (Salamanca, 2001), 57--62, Dep. Mat. Apl., Univ. Salamanca, Salamanca, 2001.
39. • Caffarelli, Luis A.; Viaclovsky, Jeff A. On the regularity of solutions to Monge-Ampère equations on Hessian manifolds. *Comm. PDE* 26 (2001), no. 11-12, 2339-2351.
40. Caffarelli, Luis A.; de la Llave, Rafael Planelike minimizers in periodic media. *Comm. Pure Appl. Math.* 54 (2001), no. 12, 1403-1441.
41. Athanasopoulos, I.; Caffarelli, L. A.; Salsa, S. The free boundary in an inverse conductivity problem. *J. Reine Angew. Math.* 534 (2001), 1-31.
42. Athanasopoulos, I.; Caffarelli, L. A.; Kenig, C.; Salsa, S. An area-Dirichlet integral minimization problem. *Comm. Pure Appl. Math.* 54 (2001), no. 4, 479-499.
43. Caffarelli, Luis A. Monotonicity properties of optimal transportation and the FKG and related inequalities. *Comm. Math. Phys.* 214 (2000), no. 3, 547-563.
44. Caffarelli, Luis A.; Yuan, Yu A priori estimates for solutions of fully nonlinear equations with convex level set. *Indiana Univ. Math. J.* 49 (2000), no. 2, 681-695.
45. Caffarelli, Luis; Dolbeault, Jean; Markowich, Peter A.; Schmeiser, Christian On Maxwellian equilibria of insulated semiconductors. *Interfaces Free Bound.* 2 (2000), no. 3, 331-339.
46. Caffarelli, Luis; Karp, Lavi; Shahgholian, Henrik. Regularity of a free boundary with application to the Pompeiu problem. *Ann. of Math.* (2) 151 (2000), no. 1, 269-292.

47. Caffarelli, Luis A. The Monge Ampère equation, allocation problems, and elliptic systems with affine invariance. Harmonic analysis and partial differential equations (Chicago, IL, 1996), 117-126, *Chicago Lectures in Math.*, Univ. Chicago Press, Chicago, IL, 1999.
48. Caffarelli, Luis A. The Harnack inequality and non-divergence equations. Nonlinear partial differential equations (Evanston, IL, 1998), 27-34, *Contemp. Math.*, 238, Amer. Math. Soc., Providence, RI, 1999.
49. Caffarelli, L. A. A note on nonlinear homogenization. *Comm. Pure Appl. Math.* 52 (1999), no. 7, 829-838.
50. • (Review) Berestycki, Henri; Caffarelli, Luis; Nirenberg, Louis. Further qualitative properties for elliptic equations in unbounded domains. Dedicated to Ennio De Giorgi. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) 25 (1997), no. 1-2, 69-94 (1998).
51. Caffarelli, L. A. The obstacle problem revisited. *J. Fourier Anal. Appl.* 4 (1998), no. 4-5, 383--402.
52. Caffarelli, Luis; Vazquez, Juan Luis Viscosity solutions for the porous medium equation. Differential equations: La Pietra 1996 (Florence), 13--26, *Proc. Sympos. Pure Math.*, 65, Amer. Math. Soc., Providence, RI, 1999.
53. Caffarelli, Luis A.; Kochengin, Sergey A.; Oliker, Vladimir I. On the numerical solution of the problem of reflector design with given far-field scattering data. Monge Ampère equation: applications to geometry and optimization (Deerfield Beach, FL, 1997), 13-32, *Contemp. Math.*, 226, Amer. Math. Soc., Providence, RI, 1999.
54. Caffarelli, L. A.; Peral, I. On $W^{1,p}$ estimates for elliptic equations in divergence form. *Comm. Pure Appl. Math.* 51 (1998), no. 1, 1-21. (Reviewer: H. J. Kuiper)
55. Athanasopoulos, I.; Caffarelli, L. A.; Salsa, S. Phase transition problems of parabolic type: flat free boundaries are smooth. *Comm. Pure Appl. Math.* 51 (1998), no. 1, 77-112.
56. Caffarelli, Luis A.; Kenig, Carlos E. Gradient estimates for variable coefficient parabolic equations and singular perturbation problems. *Amer. J. Math.* 120 (1998), no. 2, 391-439.
57. • Hyperbolic equations and frequency interactions. Lectures from the Graduate Summer School on Nonlinear Wave Phenomena held in Park City, UT, July 9--29, 1995. Edited by Luis Caffarelli and Weinan E. *IAS/Park City Mathematics Series*, 5. American Mathematical Society, Providence, RI; Institute for Advanced Study (IAS), Princeton, NJ, 1999. xii+466 pp.
58. Caffarelli, L. A.; Lederman, C.; Wolanski, N. Pointwise and viscosity solutions for the limit of a two phase parabolic singular perturbation problem. *Indiana Univ. Math. J.* 46 (1997), no. 3, 719-740.
59. Caffarelli, Luis A.; Gutiérrez, Cristian E. Singular integrals related to the Monge-Ampère equation. Wavelet theory and harmonic analysis in applied sciences (Buenos Aires, 1995), 3--13, *Appl. Numer. Harmon. Anal.*, Birkhäuser Boston, Boston, MA, 1997.
60. • Monge Ampère equation: applications to geometry and optimization. Proceedings of the NSF-CBMS Conference held at Florida Atlantic University, Deerfield Beach, FL, July 9-13, 1997. Edited by Luis A. Caffarelli and Mario Milman. *Contemporary Mathematics*, 226. American Mathematical Society, Providence, RI, 1999. x+172 pp.
61. Berestycki, H.; Caffarelli, L. A.; Nirenberg, L. Monotonicity for elliptic equations in unbounded Lipschitz domains. *Comm. Pure Appl. Math.* 50 (1997), no. 11, 1089-1111.
62. Caffarelli, L. A.; Lederman, C.; Wolanski, N. Uniform estimates and limits for a two phase parabolic singular perturbation problem. *Indiana Univ. Math. J.* 46 (1997), no. 2, 453-489.
63. Caffarelli, Luis A.; Gutiérrez, Cristian E. Properties of the solutions of the linearized Monge-Ampère equation. *Amer. J. Math.* 119 (1997), no. 2, 423-465.

64. Caffarelli, Luis A. The regularity of monotone maps of finite compression. *Comm. Pure Appl. Math.* 50 (1997), no. 6, 563--591.
65. Caffarelli, Luis A. Boundary regularity of maps with convex potentials. II. *Ann. of Math.* (2) 144 (1996), no. 3, 453-496.
66. • Louis Nirenberg receives National Medal of Science. With contributions by Luis Caffarelli and Joseph J. Kohn. *Notices Amer. Math. Soc.* 43 (1996), no. 10, 1111-1116.
67. Berestycki, H.; Caffarelli, L. A.; Nirenberg, L. Inequalities for second-order elliptic equations with applications to unbounded domains. I. A celebration of John F. Nash, Jr. *Duke Math. J.* 81 (1996), no. 2, 467-494.
68. Caffarelli, Luis A. Allocation maps with general cost functions. Partial differential equations and applications, 29--35, *Lecture Notes in Pure and Appl. Math.*, 177, Dekker, New York, 1996. (Reviewer: Erik J. Balder)
69. Caffarelli, Luis A.; Jerison, David; Lieb, Elliott H. On the case of equality in the Brunn-Minkowski inequality for capacity. *Adv. Math.* 117 (1996), no. 2, 193-207. (Athanasopoulos, I.; Caffarelli, L.; Salsa, S. Regularity of the free boundary in parabolic phase-transition problems. *Acta Math.* 176 (1996), no. 2, 245-282.
70. Athanasopoulos, I.; Caffarelli, L.; Salsa, S. Caloric functions in Lipschitz domains and the regularity of solutions to phase transition problems. *Ann. of Math.* (2) 143 (1996), no. 3, 413--434. (Reviewer: Elena Comparini)
71. Cabré, Xavier; Caffarelli, Luis A. Regularity for viscosity solutions of fully nonlinear equations $\mathcal{F}(D^2u)=0$. *Topol. Methods Nonlinear Anal.* 6 (1995), no. 1, 31--48. (Reviewer: Gary M. Lieberman)
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73. • Caffarelli, Luis A. A priori estimates and the geometry of the Monge Ampère equation. Nonlinear partial differential equations in differential geometry (Park City, UT, 1992), 5--63, *IAS/Park City Math. Ser.*, 2, *Amer. Math. Soc.*, Providence, RI, 1996. (Reviewer: John Urbas)
74. Caffarelli, Luis A.; Muler, Nora E. An L^∞ bound for solutions of the Cahn-Hilliard equation. *Arch. Rational Mech. Anal.* 133 (1995), no. 2, 129-144.
75. Caffarelli, Luis A. Uniform Lipschitz regularity of a singular perturbation problem. *Differential Integral Equations* 8 (1995), no. 7, 1585-1590. (Reviewer: Charles Bu)
76. Caffarelli, Luis A.; Gutiérrez, Cristian E. Real analysis related to the Monge-Ampère equation. *Trans. Amer. Math. Soc.* 348 (1996), no. 3, 1075-1092.
77. Caffarelli, Luis A.; Cabré, Xavier Fully nonlinear elliptic equations. *American Mathematical Society Colloquium Publications*, 43. American Mathematical Society, Providence, RI, 1995. vi+104 pp.
78. Caffarelli, Luis A.; Milman, Mario The regularity of planar maps with bounded compression and rotation. Volume in homage to Dr. Rodolfo A. Ricabarra (Spanish), 29--34, Vol. Homenaje, 1, Univ. Nac. del Sur, Bahía Blanca, 1995.
79. Caffarelli, Luis A.; Yang, Yi Song Vortex condensation in the Chern-Simons Higgs model: an existence theorem. *Comm. Math. Phys.* 168 (1995), no. 2, 321-336.
80. Caffarelli, Luis; Garofalo, Nicola; Segàla, Fausto A gradient bound for entire solutions of quasi-linear equations and its consequences. *Comm. Pure Appl. Math.* 47 (1994), no. 11, 1457-1473.
81. Caffarelli, Luis A.; Córdoba, Antonio Uniform convergence of a singular perturbation problem. *Comm. Pure Appl. Math.* 48 (1995), no. 1, 1-12.
82. Caffarelli, Luis A.; Vázquez, Juan L. A free-boundary problem for the heat equation arising in flame propagation. *Trans. Amer. Math. Soc.* 347 (1995), no. 2, 411-441.

83. Caffarelli, Luis A. A monotonicity formula for heat functions in disjoint domains. Boundary value problems for partial differential equations and applications, 53-60, *RMA Res. Notes Appl. Math.*, 29, Masson, Paris, 1993.
84. Berestycki, H.; Caffarelli, L. A.; Nirenberg, L. Symmetry for elliptic equations in a half space. Boundary value problems for partial differential equations and applications, 27-42, *RMA Res. Notes Appl. Math.*, 29, Masson, Paris, 1993
85. Caffarelli, Luis A. A note on the degeneracy of convex solutions to Monge Ampère equation. *Comm. Partial Differential Equations* 18 (1993), no. 7-8, 1213-1217.
86. Caffarelli, Luis A.; Wang, Lihe A Harnack inequality approach to the interior regularity of parabolic equations. *Indiana Univ. Math. J.* 42 (1993), no. 1, 159-165.
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88. Caffarelli, Luis A.; Córdoba, Antonio An elementary regularity theory of minimal surfaces. *Differential Integral Equations* 6 (1993), no. 1, 1-13.
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91. Caffarelli, Luis A. The regularity of mappings with a convex potential. *J. Amer. Math. Soc.* 5 (1992), no. 1, 99-104.
92. Caffarelli, Luis A. Some regularity properties of solutions of Monge Ampère equation. *Comm. Pure Appl. Math.* 44 (1991), no. 8-9, 965-969.
93. Caffarelli, Luis A.; Spruck, Joel Variational problems with critical Sobolev growth and positive Dirichlet data. *Indiana Univ. Math. J.* 39 (1990), no. 1, 1-18.
94. • Caffarelli, Luis A. Interior regularity of solutions to Monge-Ampère equations. Harmonic analysis and partial differential equations (Boca Raton, FL, 1988), 13--17, *Contemp. Math.*, 107, Amer. Math. Soc., Providence, RI, 1990.
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100. Caffarelli, Luis A. A Harnack inequality approach to the regularity of free boundaries. III. Existence theory, compactness, and dependence on X . *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) 15 (1988), no. 4, 583-602 (1989).
101. Caffarelli, Luis A. Interior a priori estimates for solutions of fully nonlinear equations. *Ann. of Math.* (2) 130 (1989), no. 1, 189-213.
102. • Caffarelli, Luis A. Free boundary problems. A survey. Topics in calculus of variations (Montecatini Terme, 1987), 31-61, *Lecture Notes in Math.*, 1365, Springer, Berlin-New York, 1989.
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106. Caffarelli, Luis A. A Harnack inequality approach to the regularity of free boundaries. II. Flat free boundaries are Lipschitz. *Comm. Pure Appl. Math.* 42 (1989), no. 1, 55-78.
107. Caffarelli, Luis; Nirenberg, Louis; Spruck, Joel Nonlinear second-order elliptic equations. V. The Dirichlet problem for Weingarten hypersurfaces. *Comm. Pure Appl. Math.* 41 (1988), no. 1, 47-70.
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112. Caffarelli, Luis A.; Friedman, Avner Blowup of solutions of nonlinear heat equations. *J. Math. Anal. Appl.* 129 (1988), no. 2, 409-419.
113. Caffarelli, Luis A.; Friedman, Avner Asymptotic behavior of solutions. *Indiana Univ. Math. J.* 36 (1987), no. 4, 711-728.
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