

# Contents

<i>Blow up in <math>\mathbb{R}^n</math> for a Parabolic Equation with a Damping Nonlinear Gradient Term</i> Liliane Alfonsi and Fred B. Weissler . . . . .	1
<i>Shrinking Doughnuts</i> Sigurd B. Angenent . . . . .	21
<i>Higher Approximations to Eigenvalues for a Nonlinear Elliptic Problem</i> F.V. Atkinson . . . . .	39
<i>Positive Solutions of Emden Equations in Cone-Like Domains</i> Catherine Bandle . . . . .	71
<i>Nonlinear Parabolic Equations Arising in Semiconductor and Viscous Droplets Models</i> Francisco Bernis . . . . .	77
<i>A Parabolic Equation with a Mean-Curvature Type Operator</i> Michiel Bertsch and Roberta Dal Passo . . . . .	89
<i>Heat Flows and Relaxed Energies for Harmonic Maps</i> Fabrice Bethuel, Jean-Michel Coron, Jean-Michel Ghidaglia, and Alain Soyeur . . . . .	99
<i>Local Existence and Uniqueness of Positive Solutions of the Equation <math>\Delta u + (1 + \epsilon\varphi(r))u^{(n+2)/(n-2)} = 0</math>, in <math>\mathbb{R}^n</math> and a Related Equation</i> Gabrielle Bianchi and Henrik Egnell . . . . .	111
<i>Singularities of Solutions of a Class of Quasilinear Equations in Divergence Form</i> Marie-Françoise Bidaut-Veron . . . . .	129
<i>An Existence Result Via <math>L^s</math>-Regularity for Some Nonlinear Elliptic Equations</i> Lucio Boccardo and François Murat . . . . .	145
<i>Identifying a Time-Dependent Unknown Coefficient in a Nonlinear Heat Equation</i> J.R. Cannon, Paul DuChateau, and Ken Steube . . . . .	153
<i>On the Structure of Solutions for Some Semilinear Elliptic Equations</i> Kuo-Shung Cheng . . . . .	171
<i>A Note on Boundary Regularity for Certain Degenerate Parabolic Equations</i> E. DiBenedetto, J. Manfredi, and V. Vespri . . . . .	177

<i>The Quenching Problem on the <math>N</math>-dimensional Ball</i> Marek Fila, Josephus Hulsof, and Pavol Quittner . . . . .	183
<i>Global Solutions for a Class of Monge–Ampère Equations</i> Bruno Franchi . . . . .	197
<i>The Structure of Solutions near an Extinction Point in a Semilinear Heat Equation with Strong Absorption: A Formal Approach</i> V.A. Galaktionov, M.A. Herrero, and J.J.L. Velázquez . . . . .	215
<i>On a Conjecture by Hagan and Brenner</i> D. Hilhorst and H.J. Hilhorst . . . . .	237
<i>A Nonlinear Diffusion-Absorption Equation with Unbounded Initial Data</i> S. Kamin, L.A. Peletier, and J.L. Vázquez . . . . .	243
<i>A Free Boundary Problem Arising in Plasma Physics</i> Hans G. Kaper and Man Kam Kwong . . . . .	265
<i>Remarks on Quenching, Blow Up and Dead Cores</i> Bernhard Kawohl . . . . .	275
<i>Bifurcation at Boundary Points of the Continuous Spectrum</i> Tassilo Küpper and Charles A. Stuart . . . . .	287
<i>A Comparison Result and Elliptic Equations Involving Subcritical Exponents</i> Man Kam Kwong . . . . .	299
<i>Advances in Quenching</i> Howard A. Levine . . . . .	319
<i>On Some Almost Everywhere Symmetry Theorems</i> John L. Lewis and Andrew Vogel . . . . .	347
<i>Symmetry Properties of Finite Total Mass Solutions of Matukuma Equation</i> Yi Li . . . . .	375
<i>An Exact Reduction of Maxwell’s Equations</i> J.B. McLeod, C.A. Stuart, and W.C. Troy . . . . .	391
<i>A General I-Theorem for Semilinear Elliptic Equations</i> Kevin McLeod . . . . .	407
<i>On Supercritical Phenomena</i> F. Merle and L.A. Peletier . . . . .	417

<i>On the Existence and Shape of Solutions to a Semilinear Neumann Problem</i> Wei-Ming Ni and Izumi Takagi . . . . .	425
<i>Global Asymptotic Stability for Strongly Nonlinear Second Order Systems</i> Patrizia Pucci and James Serrin . . . . .	437
<i>The Existence and Asymptotic Behaviour of Similarity Solutions to a Quasilinear Parabolic Equation</i> Yuan-Wei Qi . . . . .	451
<i>Maximal Solutions of Singular Diffusion Equations with General Initial Data</i> Ana Rodríguez and Juan Luis Vázquez . . . . .	471
<i>The Evolution of Harmonic Maps: Existence, Partial Regularity, and Singularities</i> Michael Struwe . . . . .	485
<i>Two Dimensional Emden–Fowler Equation with Exponential Nonlinearity</i> Takashi Suzuki . . . . .	493
<i>Global Bifurcation of Positive Solutions in <math>\mathbf{R}^n</math></i> Achilles Tertikas . . . . .	513
<i>Conformal Asymptotics of the Isothermal Gas Spheres Equation</i> Laurent Veron . . . . .	537
<i>Chemical Interfacial Reaction Models with Radial Symmetry</i> Shoji Yotsutani . . . . .	561