## **Contents**

Differentiability of the Blow-up Curve for One Dimensional Nonlinear Wave Equations.	
By L. A. Caffarelli & A. Friedman	1
On the Existence of Positive Entire Solutions of a Semilinear Elliptic Equation.	
By WY. Ding & WM. Ni	17
The Uniqueness of Hill's Spherical Vortex.  By C. J. Amick & L. E. Fraenkel	43
Lyapunov Functions for Thermomechanics with Spatially Varying Boundary Temperatures.	72
By J.M. Ball & G. Knowles	73
A Semilinear Elliptic Problem Which Is Not Selfadjoint.  By P. Pucci	85
A Multiparameter Study of a Boundary Value Problem from Chemical Reactor Theory.	
By P. Fife, L. Hsiao, & T. Zhang	107
Boundary Regularity for Quasiminima.  By W.P. Ziemer	137
Positively Invariant Regions for a Problem in Phase Transitions.  By V. Roytburd & M. Slemrod	149
A Note on a Theorem of R. Duffin.  By P.H. Rabinowitz	169
The Boundary Value Problems for Non-Linear Elliptic Equations and the Maximum Principle for Euler-Lagrange Equations.	101
By I. J. Bakelman	181
Qualitative Properties of Large Buckled States of Spherical Shells.  By KG. Shih & S.S. Antman	211

VIII Contents

Stable Equilibrium Configurations of Elastic Crystals.  By J. L. Ericksen	239
Inequalities Between Dirichlet and Neumann Eigenvalues.  By H. A. Levine & H. F. Weinberger	253
Embeddings of Anisotropic Sobolev Spaces.  By D. E. Edmunds & R. M. Edmunds	269
Monotonic Decreasing and Asymptotic Behavior of the Kinetic Energy for Weak Solutions of the Navier-Stokes Equations in Exterior Domains.  By G. P. Galdi & P. Maremonti	277
Quasilinear Hyperbolic Systems with Involutions.  By C.M. Dafermos	291
A Generalized Norton-Hoff Model and the Prandtl-Reuss Law of Plasticity.  By R. Temam	309
Symmetry and the Bifurcation of Capillary-Gravity Waves.  By M. Jones & J. Toland	357
Smoothness of Linear Laminates.  By M. Chipot, D. Kinderlehrer, & G. Vergara Caffarelli	383
On the Behavior of the Derivatives of Minimizers near Singular Points.  By E. Giusti	399
Ground States and Dirichlet Problems for $-\Delta u = f(u)$ in $\mathbb{R}^2$ . By F. V. Atkinson & L. A. Peletier	409
On Phase Transitions with Bulk, Interfacial, and Boundary Energy.  By M.E. Gurtin	429
Spectral Properties of the Laplacian in the Complement of a Deformed Cylinder.  By W. Littman	451
A New Proof of Moser's Parabolic Harnack Inequality Using the Old Ideas of Nash.  By E. B. Fabes & D. W. Stroock	459
Weakly Decaying Energy Separation and Uniqueness of Motions of an Elastic-Plastic Oscillator with Work-Hardening.	
By D.R. Owen	471

Contents	IX
On Effects of Virtual Inertia During Diffusion of a Dispersed Medium in a Suspension.  By G. Capriz & P. Giovine	491
Existence of Positive Solutions for Semilinear Elliptic Equations in General Domains.  By J. Smoller & A. Wasserman	499
Assembling a Rearrangement.  By G. Talenti	<b>52</b> 1
Asymptotic Behaviour of Solutions of Semi-Linear Elliptic Equations in $\mathbb{R}^n$ .  By K. McLeod	531
Existence Theorems Concerning Simple Integrals of the Calculus of Variations for Discontinuous Solutions.  By L. Cesari, P. Brandi, & A. Salvadori	543
On the Uniqueness of Flow of a Navier-Stokes Fluid  Due to a Stretching Boundary.  By J. B. McLeod & K. R. Rajagopal	565
On the Behavior at Infinity of Solutions of Elliptic Systems with a Finite Energy Integral.  By V. A. Kondratiev & O. A. Oleinik	575
A Class of Quasilinear Differential Inequalities Whose Solutions Are Ultimately Constant.  By R. Redheffer	591
Singular Solutions for Some Semilinear Elliptic Equations.  By H. Brezis & L. Oswald	61:
Eventual C <sup>∞</sup> -Regularity and Concavity for Flows in One-Dimensional Porous Media.  By D.G. Aronson & J.L. Vazquez	621
Fine Phase Mixtures as Minimizers of Energy.  By J. M, Ball & R. D. James	64
Fit Regions and Functions of Bounded Variation.  By W. Noll & E.G. Virga	68'
The Lavrentiev Phenomenon for Invariant Variational Problems.	

By A.C. Heinricher & V.J. Mizel .....

709

X Contents

Steady, Structured Shock Waves. Part 1: Thermoelastic Materials.  By J.E. Dunn & R.L. Fosdick	747
Published Works of James Serrin	819
Places of First Publication	827