

15. H. Le Dret, *Structure of the set of equilibrated loads in nonlinear elasticity and applications to existence and nonexistence*, J. Elasticity **17** (1987), 123–141.
16. J. E. Marsden and T. J. R. Hughes, *Topics in the mathematical foundations of elasticity*, in Nonlinear analysis and mechanics: Heriot-Watt symposium, Vol. 2, Pitman, London, 1978, pp. 30–285.
17. —, *Mathematical foundations of elasticity*, Prentice-Hall, Englewood Cliffs, 1983.
18. F. Stoppelli, *Un teorema di esistenza e di unicità relativo alle equazioni dell'elastostatica isotermica per deformazioni finite*, Ricerche Mat. **3** (1954), 247–267.
19. C. Truesdell and W. Noll, *The non-linear field theories of mechanics*, in Handbuch der Physik, Vol. III/3 (S. Flügge, Editor), Springer-Verlag, Berlin, 1965, pp. 1–602.
20. T. Valent, *Local theorems of existence and uniqueness in finite elastostatics*, in Finite elasticity (D. E. Carlson and R. T. Shield, Editors), Nijhoff, The Hague, 1978, pp. 401–421.
21. —, *Pressure boundary problems in finite elasticity. Results on local existence, uniqueness and analyticity*, in Proceedings, meeting on finite thermoelasticity (G. Grioli, Editor), Accademia Nazionale dei Lincei, Roma, 1986, pp. 241–264.
22. T. Valent and G. Zampieri, *Sulla differenziabilità di un operatore legato a una classe di sistemi differenziali quasi-lineari*, Rend. Sem. Mat. Univ. Padova **57** (1977), 311–322.
23. C.-C. Wang and C. Truesdell, *Introduction to rational elasticity*, Noordhoff, Groningen, 1973.

PHILIPPE G. CIARLET
UNIVERSITÉ PIERRE ET MARIE CURIE

BULLETIN (New Series) OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 23, Number 1, July 1990
©1990 American Mathematical Society
0273-0979/90 \$1.00 + \$.25 per page

Heat kernels and spectral theory, by E. B. Davies. Cambridge University Press, Cambridge, 1989, 197 pp., \$49.50. ISBN 0-521-36136-2

For the usual Laplacian Δ in Euclidean space \mathbf{R}^n and its spectral theory, there is a tremendous amount of information available, largely because of a number of explicit formulas that are known. For example, the heat semigroup $e^{t\Delta}$ (the operator that solves the heat equation $\partial u/\partial t = \Delta u$ for $t > 0$ from the initial value $u(x, 0)$, given certain weak growth conditions) is a convolution operator with kernel $(4\pi t)^{-n/2} e^{-|x|^2/4t}$. From the