

JOURNAL OF DIFFERENTIAL GEOMETRY

A. Kumpera, <i>Suites de Jordan-Hölder et principales d'un groupe de Lie</i>	307
T. van Duc, <i>Espaces de nullite du tenseur de courbure sur les fibres principales</i>	355
T. K. Milnor, <i>Abstract Weingarten surfaces</i>	365
H. T. Ku, <i>Automorphism groups of some geometric structures</i>	381
N. Aronszajn & P. Szeptycki, <i>Subcartesian spaces</i>	393
D. Geller, <i>The Laplacian and the Kohn Laplacian for the sphere</i>	417
J. Cheeger & D. Gromoll, <i>On the lower bound for the injectivity radius of $\frac{1}{4}$-pinched Riemannian manifolds</i>	437
C. B. Croke, <i>Some new Riemannian invariants</i>	443

JOURNAL OF DIFFERENTIAL GEOMETRY

Editors

MICHAEL F. ATIYAH
Oxford University
Oxford, England

RAOUL BOTT
Harvard University
Cambridge, MA 02138

EUGENIO CALABI
University of Pennsylvania
Philadelphia, PA 19104

JAMES EELLS, JR.
University of Warwick
Coventry, England

PHILLIP A. GRIFFITHS
Harvard University
Cambridge, MA 02138

FRIEDRICH HIRZEBRUCH
University of Bonn
Bonn, Germany

C. C. HSIUNG
Lehigh University
Bethlehem, PA 18015

WILHELM P. A. KLINGENBERG
University of Bonn
Bonn, Germany

SHOSHICHI KOBAYASHI
University of California
Berkeley, CA 94720

JOSEPH J. KOHN
Princeton University
Princeton, NJ 08540

BERTRAM KOSTANT
Massachusetts Institute of Technology
Cambridge, MA 02139

YOZO MATSUSHIMA
University of Notre Dame
Notre Dame, IN 46556

ALBERT NIJENHUIS
University of Pennsylvania
Philadelphia, PA 19104

LOUIS NIRENBERG
New York University
New York, NY 10012

RICHARD S. PALAIS
Brandeis University
Waltham, MA 02154

HANS SAMELSON
Stanford University
Stanford, CA 94305

JAMES SIMONS
State University of New York
Stony Brook, NY 11790

ISADORE M. SINGER
Massachusetts Institute of Technology
Cambridge, MA 02139

STEPHEN SMALE
University of California
Berkeley, CA 94720

SHLOMO STERNBERG
Harvard University
Cambridge, MA 02138

KAREN UHLENBECK
University of Illinois
Chicago, IL 60680

KENTARO YANO
Tokyo Institute of Technology
Tokyo, Japan

S. T. YAU
Stanford University
Stanford, CA 94305

Honorary Editorial Advisors

S. S. CHERN
University of California
Berkeley, CA 94720

ANDRE LICHNEROWICZ
College of France
Paris, France

DONALD C. SPENCER
Princeton University
Princeton, NJ 08540

The Journal of Differential Geometry, published quarterly by Lehigh University in March, June, September and December, is devoted to the publication of research papers in differential geometry and related subjects.

The subscription price for Volume 15 (1980) is \$42.00 list, \$21.00 for personal use of private individuals. Back number prices per volume (with a 25% reduction for members of the American Mathematical Society): Volumes 1–2 (1967–1968), \$21.00 list, \$15.75 reduced; Volumes 3–6 (1967–1972), \$27.00 list, \$20.25 reduced; Volumes 7–9 (1972–1974), \$36.00 list, \$27.00 reduced; Volume 10 (1975), \$45.00 list, \$33.75 reduced; Volume 11 (1976), \$52.00 list, \$39.00 reduced; Vol. 12 (1977), \$60.00 list, \$45.00 reduced; Vols. 13–14 (1978–1979), \$63.00 list, \$47.25 reduced.

Subscriptions and orders should be addressed to the American Mathematical Society, P. O. Box 1571, Annex Station, Providence, Rhode Island 02901. *All orders must be accompanied by payment, and check should be made payable to the American Mathematical Society.* General correspondence and changes of address should be sent to the American Mathematical Society, P. O. Box 6248, Providence, Rhode Island 02940.

Instructions for submission of manuscripts are given inside of the back cover of this issue.

Copyright © 1981 Lehigh University
All rights reserved
ISSN 0022-040X