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Geometry of Manifolds with Non-negative Sectional Curvature

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ISBN 978-3-319-06372-0 ISBN 978-3-319-06373-7 (eBook)
DOI 10.1007/978-3-319-06373-7
Springer Cham Heidelberg New York Dordrecht London

Lecture Notes in Mathematics ISSN print edition: 0075-8434
ISSN electronic edition: 1617-9692

Library of Congress Control Number: 2014944318

Mathematics Subject Classification (2010): 53C21; 57S25; 53C23; 58A15; 58A20; 22EXX; 22FXX,
53CXX

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Printed on acid-free paper

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Preface

The Third Mini-Meeting on Differential Geometry, “Recent Advances in the Geometry of Manifolds with Non-negative Sectional Curvature,” was held from December 6 to 17, 2010, at the Center for Research in Mathematics (CIMAT), Guanajuato, Mexico.

The invited speakers included, in alphabetical order, Gil Bor, Owen Dearriscott, Fernando Galaz-García, Luis Hernández-Lamonedá, Lee Kennard, Catherine Searle, Fabio Simas, Gregor Weingart, and Wolfgang Ziller (Distinguished Visiting Professor for the Mexican Academy of Sciences and the USA-Mexico Foundation for Science 2010). The lectures were organized into five advanced mini-courses (three lectures each) as well as two introductory mini-courses and two research reports. In addition, there were several question-and-answer sessions for graduate students, in which the lecturers participated actively.

This volume includes the lecture notes of the advanced mini-courses whose content we describe briefly. W. Ziller’s notes give an introductory and up-to-date view of the subject with sufficient bibliographic references to allow further study. C. Searle’s notes give a basic introduction to isometric group actions with a focus on applications to spaces with curvature bounded below. F. Galaz-García’s notes deal with classification results of effective, isometric torus actions on Riemannian manifolds of maximal symmetry rank. O. Dearriscott’s notes deal with the construction of n -Sasakian manifolds and recall a good deal of preliminary material, such as isoparametric hypersurfaces in spheres, contact CR and CR submanifolds, and a very detailed introduction to Riemannian submersions. L. Kennard’s notes are a condensed version of his research paper dealing with the Hopf conjecture with symmetry. Finally, G. Weingart’s notes give an introduction to exterior differential systems.

We thank all the participants for making the meeting a successful and stimulating mathematical event. We also thank CIMAT’s staff for the smooth running of the event. This meeting was the third edition of an annual event intended for researchers and graduate students, with the dual aim of combining a winter school and a research workshop. The meeting was supported by the Mexican Academy of Sciences

(AMC), the USA-Mexico Foundation for Science (FUMEC), and the Mexican Science and Technology Research Council (CONACyT). The organizers were Luis Hernández-Lamoneda (CIMAT, Mexico) and Rafael Herrera (CIMAT, Mexico).

Guanajuato, Mexico
Guanajuato, Mexico

Luis Hernández-Lamoneda
Rafael Herrera

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