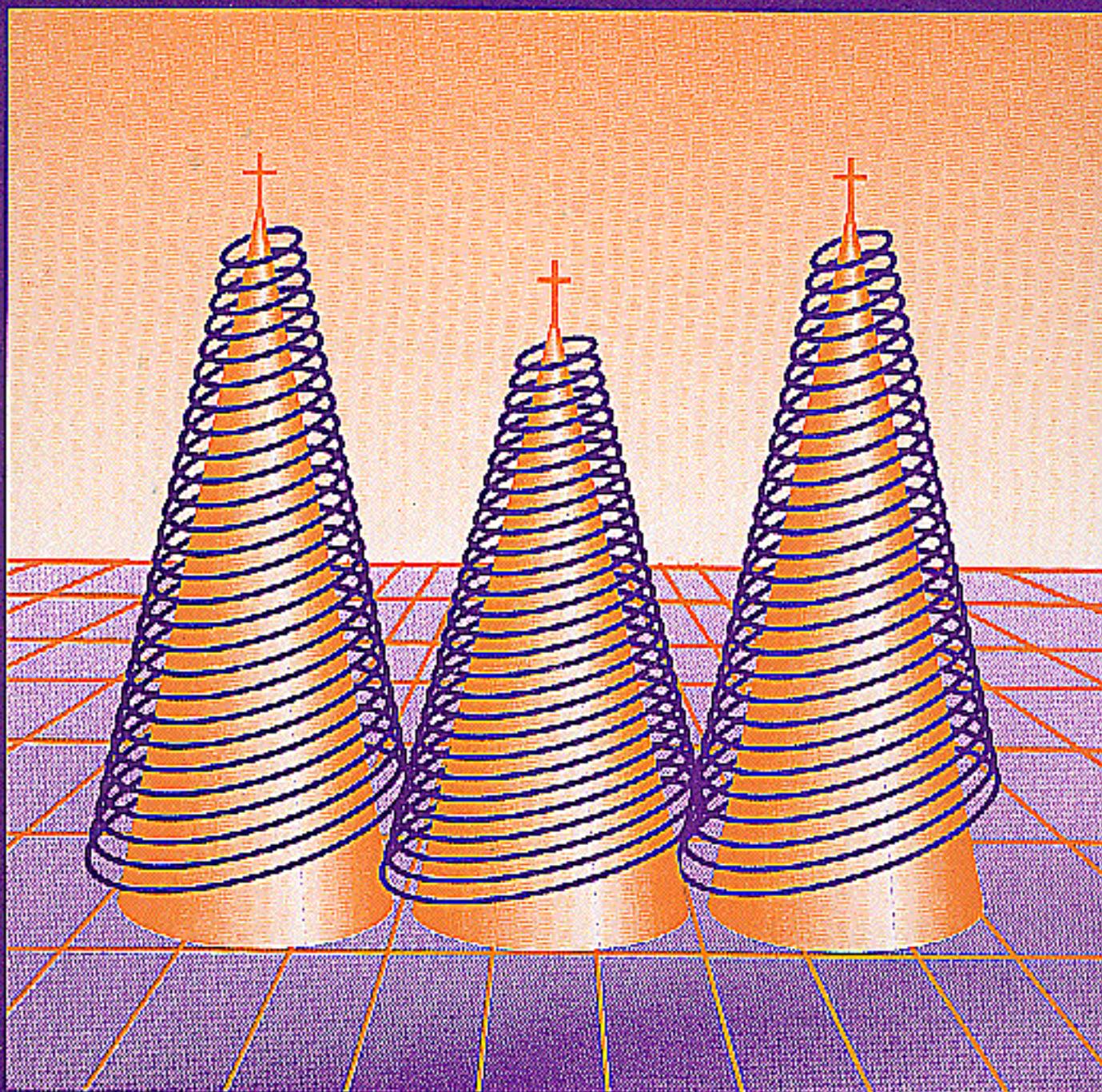


Proceedings of the VII International Colloquium on Differential Geometry

Analysis and Geometry in Foliated Manifolds



Editors

Xosé Masa, Enrique Macias-Virgós & Jesús A. Alvarez López

World Scientific



Proceedings of the VII International Collóquium on Differential Geometry

Analysis and Geometry in Foliated Manifolds

Santiago de Compostela, Spain 26–30 July, 1994

Editors

**Xosé Masa
Enrique Macias-Virgós
Jesús A. Alvarez López**

*Facultade de Matemáticas
Universidade de Santiago de Compostela
Galicia, Spain*



World Scientific

Singapore • New Jersey • London • Hong Kong

PREFACE

This volume contains the great part of the papers contributed by the speakers of the Seventh International Colloquium on Differential Geometry held at Santiago de Compostela (Spain) from 26th to 31th July 1994.

The Colloquium was organized by the Department of Geometry and Topology of the University of Santiago de Compostela. The organizing committee consisted of X. Masa, E. Macias, J.A. Alvarez, L.A. Cordero and F. Alcalde. Foliation theory had been presented in all other Colloquia previously organized by the Department, and this time the meeting was completely devoted to the various aspects of Analysis and Geometry in Foliated Manifolds.

We are most thankful to the following Institutions that have cosponsored the Colloquium: the University of Santiago de Compostela, the regional government (Xunta de Galicia) and the Spanish government (DGICYT). Without their support, we would have been unable to carry out our program.

We express also our gratitude to the participants and particularly to the contributors of the papers in this volume.

Xosé Masa

CONTENTS

Preface	vii
Leafwise Cohomology, Leafwise Homologies, and Subfoliations <i>J. A. Álvarez López and G. Hector</i>	1
Geometry of Leaves of Some Distributions on Almost r-paracontact Riemannian Manifolds of P-Sasakian Type <i>A. Bucki</i>	13
Remark on the Actions of \mathbb{R}^p on Foliated Manifolds II <i>K. Fukui</i>	23
Two Remarks About Foliations and Minimal Foliations of Codimension Greater Than Two <i>F. J. García and A. M. Naveira</i>	29
Depth of Foliations on Tunnel Number One Genus One Knot Complements <i>H. Goda</i>	39
Géométrie Et Topologie Des Espaces Difféologiques <i>G. Hector</i>	55
Regularity of Mass-Minimizing One-Dimensional Foliations <i>D. L. Johnson and P. Smith</i>	81
Some Remarks on Basic L^2 -Cohomology <i>H. Kitahara and H. K. Pak</i>	99
Functional Calculus for Tangentially Elliptic Operators on Foliated Manifolds <i>Y. A. Kordyukov</i>	113
Invariant Cohomology of Regular Lie Algebroids <i>J. Kubarski</i>	137

On Contact Groupoids and Their Simplicification <i>P. Libermann</i>	153
Minimal Submanifolds in Infinite Dimensions <i>Y. Maeda, S. Rosenberg and P. Tondeur</i>	177
Lagrangian Holonomy <i>P. Molino</i>	183
From Foliations to Coarse Geometry and Back <i>J. Roe</i>	195
Gysin Sequences <i>M. Saralegi-Aranguren</i>	207
Surfaces Not Quasi-Isometric to Leaves of Foliations of Compact 3-Manifolds <i>P. A. Schweitzer, S.J.</i>	223
Open Problems	239
List of Participants	245

List of participants

- | | |
|--------------------------------|-------------------------------------|
| I. Bajo (Vigo) | J. Roe (Oxford) |
| R. Barre (Valenciennes) | C. Ruiz (Granada) |
| J. C. Benière (Lyon) | E. Salem (Paris) |
| D. Boutat (Lyon) | E. Sanmartín (Vigo) |
| A. Bucki (Oklahoma) | M. Saralegi-Aranguren (Lens) |
| U. Bunke (Berlin) | P. Schweitzer (Rio de Janeiro) |
| B. Callenaere (Lille) | D. Tanré (Lille) |
| M. Cuadrado (Barcelona) | A. D. Tarrio (A Coruña) |
| C. Currás Bosch (Barcelona) | Ph. Tondeur (Urbana) |
| S. G. Dimiev (Sofia) | E. Vogt (Berlin) |
| D. Domínguez Plata (Santander) | K. Yamato (Osaka) |
| J. Dupont (Aarhus) | <i>from Santiago de Compostela:</i> |
| K. Fukui (Kyoto) | F. Alcalde |
| H. Goda (Tokyo) | J. A. Alvarez López |
| N. Hashiguchi (Tokyo) | A. Bonome |
| G. Hector (Lyon) | J. M. Carballés |
| B. Herrera (Barcelona) | R. Castro Bolaño |
| S. Hurder (Chicago) | H. E. Colman |
| T. Ito (Kyoto) | L. A. Cordero |
| D. L. Johnson (Lehigh) | A. Gómez Tato |
| F. W. Kamber (Urbana) | E. Macias-Virgós |
| H. Kitahara (Kanazawa) | X. Masa |
| Y. A. Kordyukov (Ufa) | J. A. Oubiña |
| J. Kubarski (Lodz) | B. Rodríguez Moreiras |
| R. Langevin (Dijon) | M. Salgado |
| J. Lejeune (Lille) | J. F. Torres |
| P. Libermann (Paris) | E. Vázquez Abal |
| I. Liousse (Toulouse) | R. Vázquez Lorenzo |
| M. Macho-Stadler (Bilbo) | |
| D. Martín de Riego (Madrid) | |
| S. Matsumoto (Tokyo) | |
| E. Merino (A Coruña) | |
| P. Molino (Montpellier) | |
| H. Moriyoshi (Tokyo) | |
| A. M. Naveira (Valencia) | |
| A. M. Porto Ferreira (Madrid) | |
| C. C. Remsing (Grahamstown) | |