

An Introduction to Involutive Structures

Detailing the main methods in the theory of involutive systems of complex vector fields, this book examines the major results from the last 25 years in the subject. One of the key tools of the subject – the Baouendi–Treves approximation theorem – is proved for many function spaces. This in turn is applied to questions in partial differential equations and several complex variables. Many basic problems such as regularity, unique continuation and boundary behavior of the solutions are explored. The local solvability of systems of partial differential equations is studied in some detail. The book provides a solid background for beginners in the field and also contains a treatment of many recent results which will be of interest to researchers in the subject.

SHIFERAW BERHANU is a Professor of Mathematics at Temple University in the US.

PAULO D. CORDARO is a Professor of Mathematics in the Institute of Mathematics and Statistics at the University of São Paulo in Brazil.

JORGE HOUNIE is a Professor of Mathematics at the Federal University of São Carlos in Brazil.

NEW MATHEMATICAL MONOGRAPHS

Editorial Board

Béla Bollobás
William Fulton
Frances Kirwan
Peter Sarnak
Barry Simon
Burt Totaro

For information about Cambridge University Press mathematics publications
visit <http://www.cambridge.org/mathematics>

An Introduction to Involutive Structures

SHIFERAW BERHANU

Temple University

PAULO D. CORDARO

University of São Paulo

JORGE HOUNIE

Federal University of São Carlos



CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press

The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9780521878579

© S. Berhanu, P. Cordaro and J. Hounie 2008

This publication is in copyright. Subject to statutory exception and to the provision of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published in print format 2008

ISBN-13 978-0-511-54306-7 OCeISBN

ISBN-13 978-0-521-87857-9 hardback

Cambridge University Press has no responsibility for the persistence or accuracy of urls for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.