Preface

The project for this special volume on pseudo-Riemannian geometry and supersymmetry grew out of the 77th "Encounter between Mathematicians and Theoretical Physicists" at the Institut de Recherche Mathématique Avancée in Strasbourg in 2005.

A number of authors of this volume participated in that meeting, including our friend Kris Galicki, who died as a consequence of a tragic hiking accident in 2007. He was always interested in the differential geometric structures occurring in physical theories and was one of the rare scientists who mastered the language of mathematics as well as that of physics.

The aim of this handbook is to cover recent developments in the field in a language comprehensible to both, mathematicians and theoretical physicists. The intended audience consists of advanced students and researchers working in differential geometry, string theory and related areas. It includes a chapter about each of the following subjects: special geometry and supersymmetry, generalized geometry, geometries with torsion, para-geometries, holonomy theory, symmetric spaces and spaces of constant curvature, conformal geometry and other topics of recent interest. The contents of each chapter is briefly summarised in the introduction.

Hamburg, January 2010   Vicente Cortés