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# Kähler Immersions of Kähler Manifolds into Complex Space Forms

Series: Lecture Notes of the Unione Matematica Italiana

- Winner of the 2017 Book Prize of the Unione Matematica Italiana
- Covers topics not surveyed before in the literature
- Requires only basic knowledge of complex and Kähler geometry
- Exercises at the end of each chapter

The aim of this book is to describe Calabi's original work on Kähler immersions of Kähler manifolds into complex space forms, to provide a detailed account of what is known today on the subject and to point out some open problems. Calabi's pioneering work, making use of the powerful tool of the diastasis function, allowed him to obtain necessary and sufficient conditions for a neighbourhood of a point to be locally Kähler immersed into a finite or infinite-dimensional complex space form. This led to a classification of (finite-dimensional) complex space forms admitting a Kähler immersion into another, and to decades of further research on the subject. Each chapter begins with a brief summary of the topics to be discussed and ends with a list of exercises designed to test the reader's understanding. Apart from the section on Kähler immersions of homogeneous bounded domains into the infinite complex projective space, which could be skipped without compromising the understanding of the rest of the book, the prerequisites to read this book are a basic knowledge of complex and Kähler geometry.

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