1. Record Nr. UNINA9911015968203321

Autore	Barletta Elisabetta
Titolo	Differential Geometry : Advanced Topics in Cauchy-Riemann and Pseudohermitian Geometry (Book I-D) / / by Elisabetta Barletta, Sorin Dragomir, Mohammad Hasan Shahid, Falleh R. Al-Solamy
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	981-9650-73-9
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (695 pages)
Collana	Infosys Science Foundation Series in Mathematical Sciences, , 2364-4044
Altri autori (Persone)	DragomirSorin ShahidMohammad Hasan Al-SolamyFalleh R
Disciplina	516.36
Soggetti	Geometry, Differential Global analysis (Mathematics) Manifolds (Mathematics) Differential Geometry Global Analysis and Analysis on Manifolds
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Pseudohermitian geometry -- CR manifolds with boundary -- Jacobi fields of the Tanaka-Webster connection -- CR immersions and Lorentzian geometry -- Proper holomorphic maps in harmonic map theory -- Beltrami equations on Rossi sphere -- CR immersions.
Sommario/riassunto	This book, Differential Geometry: Advanced Topics in CR and Pseudohermitian Geometry (Book I-D), is the fourth in a series of four books presenting a choice of advanced topics in Cauchy–Riemann (CR) and pseudohermitian geometry, such as Fefferman metrics, global behavior of tangential CR equations, Rossi spheres, the CR Yamabe problem on a CR manifold-with-boundary, Jacobi fields of the Tanaka–Webster connection, the theory of CR immersions versus Lorentzian geometry. The book also discusses boundary values of proper holomorphic maps of balls, Beltrami equations on Rossi spheres within the Koranyi–Reimann theory of quasiconformal mappings of CR manifolds, and pseudohermitian analogs to the Gauss–Ricci–Codazzi

equations in the study of CR immersions between strictly pseudoconvex CR manifolds. The other three books of the series are: Differential Geometry: Manifolds, Bundles, Characteristic Classes (Book I-A) Differential Geometry: Riemannian Geometry and Isometric Immersions (Book I-B) Differential Geometry: Foundations of Cauchy–Riemann and Pseudohermitian Geometry (Book I-C) The four books belong to an ampler book project, “Differential Geometry, Partial Differential Equations, and Mathematical Physics”, by the same authors and aim to demonstrate how certain portions of differential geometry (DG) and the theory of partial differential equations (PDEs) apply to general relativity and (quantum) gravity theory. These books supply some of the ad hoc DG and PDEs machinery yet do not constitute a comprehensive treatise on DG or PDEs, but rather authors’ choice based on their scientific (mathematical and physical) interests. These are centered around the theory of immersions—isometric, holomorphic, and CR—and pseudohermitian geometry, as devised by Sidney Martin Webster for the study of nondegenerate CR structures, themselves a DG manifestation of the tangential CR equations.