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Nota di contenuto	Preface; Contents; 1. Introduction and Statement of Results; 1.1 Notational Conventions; 1.2 Representation Theory; 1.3 Affine Structures; 1.4 Mixed Structures; 1.5 Affine Kahler Structures; 1.6 Riemannian Structures; 1.7 Weyl Geometry I; 1.8 Almost Pseudo-Hermitian Geometry; 1.9 The Gray Identity; 1.10 Kahler Geometry in the Riemannian Setting I; 1.11 Curvature Kahler-Weyl Geometry; 1.12 The Covariant Derivative of the Kahler Form I; 1.13 Hyper-Hermitian Geometry; 2. Representation Theory; 2.1 Modules for a Group G; 2.2 Quadratic Invariants; 2.3 Weyl's Theory of Invariants 2.4 Some Orthogonal Modules2.5 Some Unitary Modules; 2.6 Compact Lie Groups; 3. Connections, Curvature, and Differential Geometry; 3.1 Affine Connections; 3.2 Equiaffine Connections; 3.3 The Levi-Civita Connection; 3.4 Complex Geometry; 3.5 The Gray Identity; 3.6 Kahler Geometry in the Riemannian Setting II; 4. Real Affine Geometry; 4.1 Decomposition of and as Orthogonal Modules; 4.2 The Modules R , S^2 , 0 , and 2 in; 4.3 The Modules WO_6 , WO_7 , and WO_8 in; 4.4 Decomposition of as a General Linear Module; 4.5 Geometric Realizability of Affine Curvature Operators

4.6 Decomposition of $\mathfrak{so}(n, \mathbb{C})$ as an Orthogonal Module; 5. Affine Kahler Geometry; 5.1 Affine Kahler Curvature Tensor Quadratic Invariants; 5.2 The Ricci Tensor for a Kahler Affine Connection; 5.3 Constructing Affine (Para)-Kahler Manifolds; 5.4 Affine Kahler Curvature Operators; 5.5 Affine Para-Kahler Curvature Operators; 5.6 Structure of $\mathfrak{so}(n, \mathbb{C})$ as a GL Module; 6. Riemannian Geometry; 6.1 The Riemann Curvature Tensor; 6.2 The Weyl Conformal Curvature Tensor; 6.3 The Cauchy-Kovalevskaya Theorem; 6.4 Geometric Realizations of Riemann Curvature Tensors; 6.5 Weyl Geometry II; 7. Complex Riemannian Geometry
7.1 The Decomposition of $\mathfrak{so}(n, \mathbb{C})$ as Modules over $\mathfrak{so}(n)$; 7.2 The Submodules of $\mathfrak{so}(n, \mathbb{C})$ Arising from the Ricci Tensors; 7.3 Para-Hermitian and Pseudo-Hermitian Geometry; 7.4 Almost Para-Hermitian and Almost Pseudo-Hermitian Geometry; 7.5 Kahler Geometry in the Riemannian Setting III; 7.6 Complex Weyl Geometry; 7.7 The Covariant Derivative of the Kahler Form II; Notational Conventions; Bibliography; Index

Sommario/riassunto

A central area of study in Differential Geometry is the examination of the relationship between the purely algebraic properties of the Riemann curvature tensor and the underlying geometric properties of the manifold. In this book, the findings of numerous investigations in this field of study are reviewed and presented in a clear, coherent form, including the latest developments and proofs. Even though many authors have worked in this area in recent years, many fundamental questions still remain unanswered. Many studies begin by first working purely algebraically and then later progressing ont
