

Spinors In Four-dimensional Spaces

[DOWNLOAD HERE](#)

1;Preface;6 2;Contents ;8 3;1 Spinor Algebra;10 3.1;1.1 Orthogonal Groups;11 3.2;1.2 Null Tetrads and the Spinor Equivalent of a Tensor;13 3.3;1.3 Spinorial Representation of the Orthogonal Transformations;26 3.3.1;1.3.1 Euclidean Signature;30 3.3.2;1.3.2 Lorentzian Signature;38 3.3.3;1.3.3 Ultrahyperbolic Signature;48 3.4;1.4 Reflections;54 3.5;1.5 Clifford Algebra. Dirac Spinors;58 3.6;1.6 Inner Products. Mate of a Spinor;66 3.7;1.7 Principal Spinors. Algebraic Classification;68 3.8;Exercises;73 4;2 Connection and Curvature;76 4.1;2.1 Covariant Differentiation;76 4.2;2.2 Curvature;86 4.2.1;2.2.1 Curvature Spinors;87 4.2.2;2.2.2 Algebraic Classification of the Conformal Curvature;100 4.3;2.3 Conformal Rescalings;102 4.4;2.4 Killing Vectors. Lie Derivative of Spinors;104 4.5;Exercises;108 5;3 Applications to General Relativity;112 5.1;3.1 Maxwell's Equations;113 5.2;3.2 Dirac's Equation;124 5.3;3.3 Einstein's Equations;131 5.3.1;3.3.1 The Goldberg Sachs Theorem;132 5.3.2;3.3.2 Space-Times with Symmetries. Ernst Potentials;140 5.4;3.4 Killing Spinors;146 5.5;Exercises;153 6;4 Further Applications;158 6.1;4.1 Self-Dual Yang Mills Fields;158 6.2;4.2 H and HH Spaces;161 6.3;4.3 Killing Bispinors. The Dirac Operator;171 6.4;Exercises;174 7;Appendix A Bases Induced by Coordinate Systems;176 8;References;180 9;Index;184 EAN/ISBN : 9780817649845
Publisher(s): Birkhuser, Springer Science & Business Media Format: ePub/PDF Author(s): Torres del Castillo, Gerardo F.

[DOWNLOAD HERE](#)

Similar manuals: