

# Contents

|  |            |
|--|------------|
| <b>Overview .....</b>  | <b>1</b>   |
| <b>1 Geotensors .....</b>                                      | <b>11</b>  |
| 1.1 Linear Space.....  | 11         |
| 1.2 Autovector Space .....                                     | 18         |
| 1.3 Oriented Autoparallel Segments on a Manifold .....         | 31         |
| 1.4 Lie Group Manifolds .....                                  | 41         |
| 1.5 Geotensors .....   | 75         |
| <b>2 Tangent Autoparallel Mappings .....</b>                   | <b>79</b>  |
| 2.1 Declinative (Autowector Spaces) .....                      | 81         |
| 2.2 Declinative (Connection Manifolds) .....                   | 87         |
| 2.3 Example: Mappings from Linear Spaces into Lie Groups ..... | 92         |
| 2.4 Example: Mappings Between Lie Groups .....                 | 100        |
| 2.5 Covariant Declinative .....                                | 102        |
| <b>3 Quantities and Measurable Qualities .....</b>             | <b>105</b> |
| 3.1 One-dimensional Quality Spaces .....                       | 107        |
| 3.2 Space-Time .....   | 118        |
| 3.3 Vectors and Tensors .....                                  | 122        |
| <b>4 Intrinsic Physical Theories .....</b>                     | <b>125</b> |
| 4.1 Intrinsic Laws in Physics .....                            | 125        |
| 4.2 Example: Law of Heat Conduction .....                      | 126        |
| 4.3 Example: Ideal Elasticity .....                            | 133        |
| <b>A Appendices .....</b>                                      | <b>153</b> |
| <b>Bibliography .....</b>                                      | <b>251</b> |
| <b>Index .....</b>   | <b>257</b> |