





Special Issue Reprint

Torsion-Gravity and Spinors in Fundamental Theoretical Physics

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Einstein's theory of gravitation is perhaps one of the best-established theories ever conceived. However, it is based on the hypothesis that space–time carries curvature alone, leaving torsion out. Because torsion is a natural part of the most general geometric background in which Einstein gravity is built, it is all too natural that the torsional completion of gravity should be considered. Constructing an underlying stage in which both curvature and torsion are present, the fact that curvature couples with energy suggests that torsion may couple with spin, which is the other conserved quantity in quantum field theory. Torsion–gravity with spinning matter is, therefore, a complete and self-consistent setting for modern physics, with potential applications wherever spin effects may be important, stretching from quantum mechanics to the standard models of particle physics and early cosmology. However, this fact is not as present in today's literature as it might be. The scope of the present collection of papers is to consolidate the wisdom of various experts in the field so as to clarify the present status of torsion in gravity and spin in quantum field theory.





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