NIKY KAMRAN, Department of Mathematics and Statistics, University of McGill, Montreal, Quebec H3A 2K6

The scientific correspondence between Einstein and Cartan—Letters on absolute parallelism

Between 1929 and 1932, Einstein and Elie Cartan carried an intense scientific correspondence on the geometric and analytic aspects of a unified field theory of gravitation and electromagnetism which had been proposed by Einstein in 1929. This correspondence was edited by Robert Debever, and published by Princeton University Press in 1979 on the occasion of Einstein's centenary. The framework of this theory is that of a differentiable manifold endowed with a connection for which all frames are parallel. Such a connection has necessarily zero curvature, but it will in general have non-zero torsion. The issues that Einstein and Cartan discussed in great detail dealt mostly with the local existence of analytic solutions to the field equations, and their degree of generality in the sense of Cartan-Kaehler theory. We will present some of the mathematical and historical highlights of this fascinating (and sometimes frustrating) correspondence.