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New Path Equations in Einstein Non-symmetric Geometry

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Adopting Bazanski approach, two new classes of path equations are derived in Einstein non-symmetric geometry. The first class is the path equations of a test particle moving in a gravitational field, while the second class represents path equations of charged particles. The path equations of charged particles give rise to Lorentz force. Moreover, these path equations may represent an interpretation of some interactions between torsion and electromagnetic potential even if the electromagnetic force vanishes. It is to be noted that the above two classes of paths are formulated in terms of Einstein non-symmetric connection. An explicit formula of such a connection, satisfying the Einstein metricity condition, is obtained by localizing the global formula given recently by Ivanov-Zlatanovi{\c}.

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