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Einstein’s General Equation of the Gravitational Field

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Abstract : The generalization of relativistic theory of gravity based essentially on the principle of equivalence stipulates that for all bodies, the grave mass is equal to the inert mass which leads us to believe that gravitation is not a property of the bodies themselves, but of space, and the conclusion that the gravitational field must curved space-time what allows the abandonment of Minkowski space (because Minkowski space-time being nonetheless null curvature) to adopt Riemannian geometry as a mathematical framework in order to determine the curvature. Therefore the work presented in this paper begins with the evolution of the concept of gravity then tensor field which manifests by Riemannian geometry to formulate the general equation of the gravitational field.

Keywords : inertia, principle of equivalence, tensors, Riemannian geometry
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