

Right Solution of Geodesic Equation in Schwarzschild Metric and Overall Examination of Physical Laws

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Abstract : 108 years have passed since a great number of physicists explained astronomical and physical phenomena by solving geodesic equations in the Schwarzschild metric. However, when solving the geodesic equations in Schwarzschild metric, they did not correctly solve one branch of the component of space among spatial and temporal components of four-dimensional force and did not come up with physical laws correctly by means of physical analysis from the results obtained by solving the geodesic equations. In addition, they did not treat the astronomical and physical phenomena in a physical way based on the correct physical laws obtained from the solution of the geodesic equations in the Schwarzschild metric. Therefore, some former scholars mentioned that Einstein's theoretical basis of a general theory of relativity was obscure and incorrect, but they did not give a correct physical solution to the problems. Furthermore, since the general theory of relativity has not given a quantitative solution to obscure and incorrect problems, the generalization of gravitational theory has not yet been successfully completed, although former scholars have thought of it and tried to do it. In order to solve the problems, it is necessary to explore the obscure and incorrect problems in a general theory of relativity based on the physical laws and to find out the methodology for solving the problems. Therefore, as the first step toward achieving this purpose, the right solution of the geodesic equation in the Schwarzschild metric has been presented. Next, the correct physical laws found by making a physical analysis of the results have been presented, the obscure and incorrect problems have been shown, and an analysis of them has been made based on the physical laws. In addition, the experimental verification of the physical laws found by us has been made.

Keywords : equivalence principle, general relativity, geometrodynamics, Schwarzschild, Poincaré

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