DUALITY-SYMMETRIC GRAVITY AND SUPERGRAVITY: TESTING THE PST APPROACH

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S u m m a r y

Drawing an analogy between the gravity dynamical equation of motion and that of the Maxwell electrodynamics with an electric source, we outline a way of the appearance of a field dual to a graviton one. We propose a dimensional reduction ansatz for the strength of this field which reproduces the correct duality relations between the fields arising in the dimensional reduction of a D-dimensional gravity action to that in the 1D dimensions. Modifying the Pasti—Sorokin—Tonin (PST) approach, we construct a new term entering the action of $D = 11$ duality-symmetric gravity and, by using the proposed ansatz, we confirm the relevance of such a term to reproduce the correct duality-symmetric structure of the reduced theory. We end up by extending the results to the bosonic sector of $D = 11$ supergravity.