

MULTIDIMENSIONAL SOLITONS WITH SPHERICAL COMPACTIFICATION

*Alexey Chopovsky, Maxim Eingorn, Alexander Zhuk
Department of Theoretical Physics
Astronomical Observatory Odessa
National University*

Multidimensional static spherically symmetric (with respect to the external three-dimensional space) vacuum solutions of the Einstein equation were well-known and prevalent in literature for a long time. These solutions are called solitons. Among them, there is a class of particular solutions, called latent solitons, which are indistinguishable from General Relativity concerning the gravitational tests. Black strings and black branes belong to this class.

Changing the compactification type, we construct exact and approximate soliton solutions, when the internal space represents a sphere of some finite radius. We investigate these solutions concerning their compatibility with the experimental data and establish restrictions on their parameters.