

**About the papers “Possible Universal Neutrino Interaction» ( VOLKOV D.V., AKULOV V.P. (1972)) and “Higgs effect for Goldstone particles with spin 1/2 “ ( VOLKOV D.V., SOROKA V.A. (1973))**

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The pioneering paper by Dmitry Volkov et al. examined the symmetry transformation with fermion as a parameter of the transformation. Nowadays, such symmetry is called “supersymmetry”. Fermionic massless particle with spin 1/2 - goldstino – appears after spontaneous breaking of the symmetry In the paper [1 ] authors proposed a nonlinear Lagrangian for goldstino.

Authors considered neutrino (see, e.g. the title of the paper [1]) as a candidate for the role of goldstino, because at the time of publication neutrino was believed to be massless. Although now we are confident that the neutrino is not goldstino , this does not diminish the value of paper [1]. In this paper nonlinear supersymmetric theory was developed in the four-dimensional space – time. It was done for the second time in the world literature ( after the article by Gol'fand and Likhtman published in JETP Letters in the year 1971 ).

It is shown in the paper [2] that the massless particle with spin 3/2 ( gravitino - spinor partner of the graviton), arising due to the localization of fermionic transformation , absorbs goldstino and obtains the mass. This is what is now called superhiggs effect . This paper is the first publication about supergravity in the world literature\_

[1] VOLKOV D.V., AKULOV V.P. JETP LETTERS **16**, 438 (1972)

[2] VOLKOV D.V., SOROKA V.A., JETP LETTERS **18**, 529 (1973)