Spin waves in a two-sublattice antiferromagnet. A new class of self-similar solutions of the Landau-Lifshitz equation

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In the paper, spin waves in a uniaxial two-sublattice antiferromagnet are investigated. A new class of self-similar solutions of the Landau-Lifshitz equation is obtained and, therefore, a new type of spin waves is described. Examples of solutions of the found class are presented. New type of solution admits both linear and non-linear spin waves, including solitons. Space transformations used in the solution are mathematically analogous to the relativistic space transformations.