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Dipole-glass behavior in substances with coexisting ferroelectric and antiferroelectric phases VLADIMIR SOBOLEV, South Dakota School of Mines and Technology, Rapid City, SD 57701, VALERII ISHCHUK, Science and Engineering Center "Reactivelektron", Donetsk, 83096 Ukraine — Using the substances with small difference in free energies of ferroelectric and antiferroelectric phases as example we will demonstrate that these compounds possess the set of properties characteristic for the so-called "dipole glasses". We will discuss possible phase diagrams of substances that can be misguidedly attributed as glasses. By no means have we wanted to cast doubt on the existence of "dipole glasses" in the nature. Main attention will be paid to the long-time relaxation process of physical characteristics of these compounds after their state of thermodynamic equilibrium was disturbed by external influences. The long-time relaxation along with the pronounced frequency dependence of parameters (for example, dependence of dielectric or magnetic characteristics on the frequency of measuring field) is considered as main features to consider these systems as "glasses". Our main purpose is only to call attention to the fact that one has to be really careful during the interpretation of experimental results in substances in which the inhomogeneous states with coexisting domains of ferroelectric and antiferroelectric phases can take place.

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