

Abstract Submitted
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Anisotropy of induced polarization in the context of the generalized effective-medium theory.¹ VLADIMIR BURTMAN, Physics and Geophysics department, University of Utah, MICHAEL S. ZHDANOV², Geophysics department, University of Utah, ALEXANDER GRIBENKO, Geophysics Department, University of Utah — The rock samples are examples of heterogeneous complex structure material. Modeling of electromagnetic response of this medium makes it possible to study the anisotropy of induced polarization (IP) effect. The IP effect is studied in the context of the developed generalized effective-medium theory of induced polarization (GEMTIP). The effective-medium conductivity defined by the GEMTIP model, in a general case, is represented by a tensor function. This tensorial property of the effective-medium conductivity provides a new insight in the anisotropy phenomenon in the IP effect. As an example, we consider a multiphase composite polarized model of a rock formation with ellipsoidal inclusions. We demonstrate that the effective conductivity of this formation may be anisotropic, even if the host rock and all the grains are electrically isotropic.

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