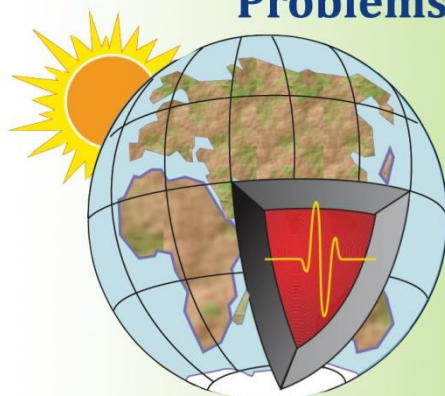


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ABOUT THE ROLE OF THE HALL EFFECT AT MAGNETOTELLURIC SOUNDING

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The containing rocks over deposits of oil and gas penetrated by a stream of hydrocarbon fluids represent the semiconductor medium in which manifestation of Hall's effect is possible. Interest in this phenomenon has arisen by results of electromagnetic soundings with controlled sources in regions of areas of hydrocarbons. The similar phenomena are possible also owing to impact of Earth's magnetic field on the currents caused in fluids at electromagnetic soundings of porous geological media. Here the role of viscosity and conductivity is big. Their coefficients can be defined during the experiments. So far, for the geological media the characteristic of microprocesses are known insufficiently, therefore it is better to address an experiment. For its planning, it is possible to consider influence of the Earth's magnetic field, introducing Hall's conductivity tensor. In the anisotropic medium, the field splits to the components differing in coefficients of attenuation and phase speed – normal modes. The difference of modes connected with its polarizations and the direction of rotation of a vector of the field, in one mode the field rotates clockwise, in the second against. For physical reasons clearly that due to Hall's effect the response of the medium can be unequal in cases of excitation of the medium by only one of normal waves. For detection of influence of the Hall's effect in magnetotelluric sounding the method of the polarizing analysis based on a data processing algorithm with division of a time spectrum of the MT-field into spectra of normal modes with the right and left circular polarization is offered.

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