



Thermal regime of the underground waters

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The heterogeneous thermal field of upper layers of the lithosphere was substantially formed due to the action of the underground waters. Mass transfer in the interior defined by the variations of the convection heat-flow reaching 25 mW/m^2 to 30 mW/m^2 within the upper sedimentary strata. Underground waters greatly affect the temperature distribution up to great depths. For example, large, low-temperature zones in the center of different regions has been found to be produced by cold infiltration waters. The authors have found that the thermal field is largely defined by the movement of underground waters. The lowest T has been recorded in the areas with the deepest level of underground water. The upper sedimentary cover, particularly in the central portions of the arches, is affected by the intensive infiltration of surface waters cooling the rocks and producing local temperature minima. High-temperature zones have been detected on large troughs. Almost all of them are buried zones of underground water discharge producing temperature and thermogradient maxima in the thermal field. By use of the geothermal observation, we determined filtration rate and other parameters of underground waters.