O17-5 | PALEOTEMPERATURE RECONSTRUCTIONS BY USING BOREHOLE GEOTHERMAL DATA

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The paleotemperature reconsruction problem consist in determininig the earth temperature in the past. Such a problem we have reduced to equivalent Fredhlom integral equation from the first kind with help of the Green function of the parabolic differental equation. When solving the above problem there are mainly two difficulties:

- constructing an effective algorithm for calculating the Green function determining the kernel of the integral equation,
- getting to a stable solution of the integral equation of the first kind, representing a ill-posed problem.

When solving the integral equation we use the Tikhonov's method of regularization in which the smoothing functional is minimized. The method offered is realized on a personal computer and allows for quick solving of inverse paleotemperature problem.

We applied above method for paleotemperature reconstruction on the Bulgarian terriotory the Last Pleistocene and Holocene.