

Interactive comment on “Borehole paleoclimatology – the effect of deep lakes and “heat islands” on temperature profiles” by V. T. Balobaev et al.

V. T. Balobaev et al.

Received and published: 25 May 2008

We present responses to the comments of Anonymous Referee No.3.

Comment 1. As mentioned in the text, analytic solution of the heat conduction equation for the axisymmetric geothermal model with the considered boundary conditions (2) was published more than 30 years ago.

Response 1. Indeed, the paper of Balobaev and Shastkevich was published in the monograph “Lakes of the Siberia Cryolithozone” in 1974 (in Russian). This paper is not easily accessible even for Russian researchers, and taking into account that this monograph was not translated into English, it is practically inaccessible for scientists from other countries. The aim of utilization of Balobaev and Shastkevich method in our

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



short paper is to introduce this procedure (Balobayev and Shastkevich, 1974) to the present-day readers and show potential possibilities for estimating the maximum effect of lakes on borehole temperature profiles.

Comment 2. ...from a practical point of view, I am rather sceptical about attractiveness and efficiency of the analytical formula today, when confronted with the available numerical codes.

Response 2. It is difficult to us to add some new to the referee's comment: "On the other hand, it is always good to have an analytic solution of a problem, which can be used in evaluating a performance of a numerical code. From this point of view, I consider it useful to publish the discussion paper".

Comment 3. We would thank anonymous referee No.3 for revealing some typos in the text. The typos were corrected.

Reference

Balobayev, V.T. and Shastkevich, Yu.G.: The estimation of the talik zones configuration and the steady temperature field of rocks beneath the lakes of arbitrary contour, In: Lakes of the Siberia Cryolithozone (in Russian), Novosibirsk, Nauka, 116–127, 1974.

L.V. Eppelbaum (levap@post.tau.ac.il), Dept. of Geophysics and Planetary Sciences, Tel Aviv University, Israel

Interactive comment on Clim. Past Discuss., 4, 415, 2008.