



## **Applying simple glacier model for calculating the parameters of Chagan-Uzun massif glaciation (SE Altai, Russia)**

R.K. Nepop, A.R. Agatova

Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia (agatr@mail.ru)

Complexity and significance of paleogeographical reconstructions force to use a broad range of different methods studying the history of glaciation. By now still unsolved problem is the problem of glaciations evolution of Chagan-Uzun massif - tectonic block separated Kuray and Chuya intermontane depressions (SE Russian Altai). In contrast to the high mountain ridges in the frame of these depressions there are no modern glaciers on the top and in the valleys of Chagan-Uzun massif.

Nevertheless our detailed field study clearly reveals the terminal moraine of Kyzylchin glacier. That allows us to assert the presence of ice basin on the top of Chagan-Uzun massif and outlet glacier in Kyzylchin valley in Late Pleistocene. Calculating the ice thickness and ice basin area was made using simple glacier model (Paterson, 1994). The appropriateness of this model was confirmed using Budd criteria (Budd, 1968) and basal shear stress was estimated using its correlation dependence on vertical range of the glacier (Haerberli, Hoelzle, 1997).

As a result the ice thickness and the altitude of the maximal ice basin level fully correspond with the data obtained by geomorphological methods. So the results of using geomorphological methods and applying simple glacier model supplement each other and made it possible to reconstruct parameters of Late Pleistocene glaciation of Chagan-Uzun massif.

This research was supported by RFBR (grant # 06-05-64920).