RECONSTRUCTION OF THE BALANCED STRUCTURE OF THE EASTERN PART OF ALPINE GREATER CAUCASUS USING DATA FROM QUANTITATIVE ANALYSIS OF LINEAR FOLDING − CASE STUDY

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Detailed data on structures of a sedimentary cover of the Greater Caucasus by three tectonic zones (Chiaur, Tfan and Shakhdag) are analyzed. Eleven cross-sections with total length of 125 km have been studied. Folded domains were selected in sections. Dip angle of folds axial surfaces, dip angle of an folds envelope, interlimb angle of folds were measured in these domains. Balanced sections with total length of 270 km of pre-folded state of sections were restored using a special method. Folded domains (220 in total) have been aggregated to 28 structural cells for which shortening value was measured (from 36 to 67 %, 54 % on the average). The depths (heights) of boundaries of the main stratigraphic units were defined using both this data and initial thicknesses of all units. Structures in a relief of top of basement have been described based on this data (depth varied from 4 to 24 km at an average depth of 13 km). The height of an eroded part of sedimentary column above a relief varied from 7 to 24 km (16 km in average). The data on location of shortening values, on relief of basement top and on amplitudes of displacement on faults in a folded sedimentary cover doesn't confirm existence of "accretionary prism" structures.

Keywords: tectonophysics, folding, balanced sections, value of strain, Greater Caucasus.