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Thermogeodynamic manifestations in the Caucasus and their genesis

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Abstract. In the work two aspects of thermal character are considered: first of all this is the connection of subduction phenomena with thermal life of the Caucasus on the basis of over interpreted data of magnetotelluric sounding, and secondly, origin of thermostressed condition of the Caucasus and its geological aspects which is manifested in the following:

1. in the zones of anomalous thermoisplacements thermofaults should occur (Le Pishon et al., 1977). These thermofaults are in good correlation with deep faults which are distinguished by geological and seismic methods, these thermofaults may be earthquake sources (Spitak, Racha, etc. earthquakes), also may be channels through which magma derivatives (giving mineral deposits) may penetrate on surface (Gugunava and Gijeishvili, 1989);

2. in the body of sedimentary complex thermostressed seals and seal failures occur, which are apparently traps for oil-gas fluids. Good correlation of thermoisense anomalies with oil deposits of the Caucasus is shown (Alexidze et al., 1985; Gugunava, 1980).

Everything above mentioned was carried out within frames of stationary thermal model which did not allow us to reveal time characteristics of interconnection of geological medium and thermal field.

Now investigations are being carried out within the frames of stationary thermal model and its interconnection with geological environment.

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