The relation between heat flow, topography and Moho depth for Europe is presented. New heat flow map of Europe (Majewski and Wyżewski, 2010) is based on updated database of uncontaminated heat flow measurements and re-analysis of results. Data were obtained by SRTM satellite. Circles on map are 50 km in diameter. In case of circles overlapping values are averaged. The most recent high amplitude surface temperature change from recent Pleistocene glacial period to Holocene is the biggest influence upon observed variation of heat flow data due to diffusion nature of the process. Earlier in time glacial/interglacial periods of surface temperature changes in the similar amplitude are of less influence (Mauche et al., 2000). The northern and central Europe area was covered by ice sheet during the last glacial maximum (LGM) 25-45 ka ago and cold climate be present there and in surrounding areas to the south. The synthetic heat flow transient profile was calculated as a response to glacial cycles with glacial-interglacial surface temperature amplitude 7°C-14°C range for a homogeneous model with diffusivity $0.9 \times 10^{-6}$ m$^2$ s$^{-1}$. The palaeoclimatic correction for the above amplitude of change as proposed by Bomford et al. (2001) has been calculated for the above model corrected for the salt depth as dependent on depth-independent heat flow correction (Majewski and Wyżewski 2010). This correction has been applied to the set of measured and resampled heat flow values in the IBC (International heat flow 1961) dataset and in addition new data reported in recent papers for Poland and Germany. As correction is highest for shallow wells and lowest for deep wells (≥2 km). Therefore, it allows to bring the data to the same level. As an example, this correction method resulted in increasing heat flow for Eastern Europe. Overall, the new dataset and correlation methods increased the quality of correlation was checked for all analyzed areas. See figure 5 for correlation quality charts. Correlation of heat flow with crustal thickness shows positive correlation of heat flow with elevation. Depending on region and elevation range correction values is up to two times higher than Moho depth in km, while in other cases elevation value is much more. Correlation to elevation above sea level in negative for most of Europe (to higher we get the smaller the heat flow). Only for area of anatolia this correlation is positive.

III. Analysis and results

For analysis Europe was divided into 4 areas. A: area related with Precambrian East European craton (EEC), area related with Precambrian Paratethys (PAR), area related with Scandinavian Caledonides (C) and area related to Arabia (AR). For each of these areas heat flow measurements were analyzed in relation to Moho depth and elevation above sea level. Value of coefficients and $r$ is sum of $a$ and $b$ (heat flow $\text{mW/m}^2$) were calculated to minimize $r^2$ value for all measurements in given area (M – Moho depth in km, $H$ – elevation in km, $HF$ – heat flow in $\text{mW/m}^2$). Values of calculated coefficients for area A: $a=-0.30$, $b=4.23$, for area B: $a=-0.06$, $b=3.09$, for area C: $a=-0.14$, $b=4.05$, for area D: $a=-0.01$, $b=3.46$. Quality of correlation was checked for all analyzed areas. See figure 5 for correlation quality charts.