

Candidates for volcanoes under the ice of Antarctica detected by their gravito-topographic signal

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We analysed the newest gravity field models (given in the form of spherical harmonic expansion to degree and order 2190) EIGEN 6C4 and the newest RET 14 [which consists basically from the gravity data from EIGEN 6C4 and bedrock topography from the Bedmap 2 model, describing the topography of the ground under the ice of Antarctica]. From these models we computed the gravity anomalies, the Marussi tensor of the second derivatives of the disturbing potential, the gravity invariants and their specific ratio, the strike angle and the virtual deformations. It is important and new that all these „gravity aspects“ (derived from the models mentioned) were used together. We applied these results for a selected part of Antarctica; not too far from the Lake Vostok we discovered at least two conical objects that might be subglacial volcanoes. We present all predictors and arguments we have available to support this hypothesis, but we are well aware that the “last word” waits for other specialists. We provide geographic coordinates on the ice surface where to dig for the possible volcanoes.