

# GRAVITY RESIDUAL ANOMALIES AND GEOTHERMICS IN LATIUM REGION (CENTRAL ITALY)

by

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## ABSTRACT

Going from the thyrranian coast towards the Apennines (SW-NE), a general decrease in Bouguer anomaly values characterizes the Latium gravimetric field. This feature can be referred to a Moho progressive deepening. A sequence of higher order anomalies is superimposed on this back-ground (first order regional field); these higher order anomalies can be ascribed to thickness variations of a light cover (pyroclastics, shales, sands etc. with a density of 2.00-2.40) overlying a thick, mostly carbonatic basement havin ga density of 2.60-2.70 and forming the major geothermal reservoir. The analysis of the residual anomalies showed by a filtering of the first and second order regional fields ( $R = \sqrt{5}$  km) is very interesting when related generally to the geothermal phenomena and specifically

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to the known and supposed geothermal fields. From the n-1 residual anomalies map the following remarks appear: 1) Latium geothermal areas are located in residual gravimetric high zones and limited by gravimetric discontinuities, probably due to faults. 2) Latium known geothermal fields (Torre Alfina, Cesano, Latera) are located in residual gravimetric high zones. 3) The most productive wells are usually located on the edge of the gravimetric discontinuities. 4) The wells not productive because of permeability lack but having well bottom temperatures always high, are usually located in the upper portion of the structures.

Of remarkable interest concerning the other several Latium areas not yet explored but being on study; these areas occur in structural settlements similar to those of the known geothermal fields. Specifically we can notify:

- a) Tragliata structure and its southern extension
- b) Ciampino-Velletri structure (Albani Hills)
- c) Ardea and Anzio structures (SE of Rome).

The existence of high temperatures within these structures is not directly proved but can be strongly presumed by geochemical data and by analogies with close structures.

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