



Curie depth vs. flat subduction in Central Mexico

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Forearcs located above active subduction zones are generally characterized by low heat flow values, and this is considered a consequence of the subduction of cold slabs beneath continental plates. In the case of Central Mexico, the geometry of the subducting Cocos plate is quite unusual, the slab runs flat for several hundreds of kilometers before plunging into the asthenosphere. This particular geometry has a strong influence on the temperature distribution of the overriding plate where very low heatflow values are recorded (15-30 mW/m²). In this paper we use the aeromagnetic map of Mexico in order to infer the maximum depth of magnetic source, regarded as Curie depth and corresponding to a temperature of 575-600C°. Our spectral analysis revealed the existence of a deep magnetic source (30-40 km). We compare these results with the thermal structure associated with flat slab subduction in the area. We obtained a good agreement between the two estimates and we conclude that flat slab subduction in Central Mexico controls the maximum depth of magnetic sources in the overriding plate.