

INTERPRETATION OF CHAMP MAGNETIC ANOMALY DATA OVER THE PANNONIAN BASIN REGION USING LOWER ALTITUDE AND GRADIENT DATA

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In 2005 (Taylor et al., 2005-Earth Observation with CHAMP Results from Three Years in Orbit) computed and interpreted a CHAMP satellite magnetic anomaly map, at 400 km altitude, over the Pannonian Basin and surrounding region using the method of Alsdorf et al. (1994). This area was chosen since it has one of the thinnest continental crusts in Europe and is the region of complex tectonic structures. The future SWARM satellite constellation of three spacecraft, with one at a high altitude and the other two lower, will initially be at the same altitude as CHAMP but eventually they will descent to a lower altitude. We recomputed our most recent satellite magnetic anomaly map, using the spherical-cap method of Haines (1985), the technique of Alsdorf et al. (1994) and from spherical harmonic coefficients of MF6 (Maus et al., 2008) employing the latest and lowest altitude CHAMP data, in order to evaluate and reinterpret these newer data to determine the advantage of lower altitude satellite data. The SWARM constellation will have the two lowest altitude satellites flying abreast, with a separation of between *ca.* 150 to 200 km. to record the horizontal magnetic gradient. Since the CHAMP satellite has been in orbit for eight years and has obtained an extensive range of data, both vertically and horizontally there is a large enough data base to compute the magnetic gradients over the Pannonian Basin region using the many orbits. We computed the magnetic anomaly gradients in order to determine how these component data will improve our interpretation and to preview what the SWARM mission will reveal with reference to the horizontal gradient anomalies.

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