



Gravity and magnetic measurements in the area Chirpan - Plovdiv (Bulgaria)

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Two destructive earthquakes (M 6.8 and M 7.0) occurred on April 14 and April 18 1928 near the city of Plovdiv in south Bulgaria. These earthquakes are among the most important that occurred in Europe in the 20th century. The first shock occurred on a south dipping fault causing a uniform slip of 0.7 m. The second shock occurred on a north dipping fault realizing 75 % of the seismic moment and causing a maximum slip of 2.6 m. In order to understand the tectonic setting of the graben two gravity measurement campaigns were carried out in area in 2004 and 2005. In total 170 points have been measured in a zone of 3150 km². The graben area was well limited using Bouguer major anomaly map. A specific feature of this graben is this one is characterized by a large positive anomaly. To give more constrain to our interpretation magnetic measurement have been carried out in 2005 along profile roughly N-S. In total 200 km have been measured. The received data have been reduced to the pole and two larges positives anomalies are detected in the Northern part of the area. An interpretation of the tectonic setting is proposed.