大别山地震波速度剖面的重力拟合及花岗岩带

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提要：笔者对穿越大别山造山带的六安—大冶宽角反射地震剖面进行了重力拟合。拟合结果表明严格按宽角反射地震速度换算成的密度剖面所产生的是一个重力高，它反映出大别山是一个穹隆，与实测大别山重力低大相径庭。只有将位于大别山山根上，南北大别之间设置一个从地表直达莫霍界面的巨大低密度体，重力曲线才能得到很好的拟合。这个低密度体应为近北西走向的花岗岩带。它与反射地震剖面上石镇透明反射地震带位置吻合，但宽度远较反射地震透明带为大。重力曲线的拟合进一步说明，在华北陆块与扬子陆块碰撞后的白垩纪时，大别山出现一个伸展期，在这个时期，大别山穹隆形成，并伴随有大规模花岗岩的侵入，超高压变质岩从地壳中下部折返到地表。研究说明，联合应用反射地震、宽角反射地震和重力，进行综合解释是必要的，可以得到更令人信服的地质结论。

关 键 词：大别山构造带；宽角反射地震；重力异常
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Simulation of gravity anomaly of the velocity profile from wide-angle reflection seismic profiling and the granite belt in the Dabie Mountains

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Abstract: Simulation of gravity anomaly at the Liu'an-Daye wide-angle reflection profile transecting the Dabie orogenic belt shows that the gravity anomaly produced by the density profile obtained by conversion of the seismic velocity from wide-angle reflections is a gravity high, which reflects that the Dabie Mountains area is a dome. This result is quite different from a gravity low determined by the field gravity measurements. The gravity anomaly can be well simulated only by placing a huge low-density body from the surface to the Moho at the boundary between the North and the South Dabie Mountains, at the root of the Dabie Mountains. This low-density should be a nearly NW-trending granite belt. Its location is in good agreement with that of the Shizhen transparent seismic reflection belt but it is far wider than the latter. The fitting of the gravity curve further suggests that after collision between the North China block and Yangtze block an extensional period occurred in the Dabie area during the Cretaceous, and meanwhile, the Dabie dome formed, accompanied by extensive intrusion of granite, and ultrahigh-pressure metamorphic rocks were exhumed to the surface. This study shows that it is necessary to combine seismic reflection profiling, wide-angle seismic reflection profiling and gravity survey to make an integrated interpretation.
Key words: Dabie tectonic belt; wide-angle seismic reflection profiling; gravity anomaly