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AlpinAero2008 - an airborne gravity campaign for improved geoid modelling in the Alps

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In autumn 2008 an airborne gravity campaign - AlpinAero2008 - had been carried out in the German foreland and the northern part of the Alps using the GFZ-owned LaCoste&Romberg airborne gravimeter S124 onboard of a pressurised aircraft "Beech 65-88 QueenAir".
The area of investigation covers about 85,000 square kilometers, including the mountaineous border region from Germany to Austria, Switzerland, and France. The mean flight altitude was about 2500 meters, whereas some tracks were re-flown at different altitudes varying between 1000 and 4000 meters.
The main purpose of the AlpinAero2008 gravity campaign was: i) to provide a homogeneous airborne gravity data set, ii) to improve the geoid modelling, and, iii) finally, to contribute in that way to the unification of height systems in this particular region.
The newly derived airborne gravity disturbances allow to compare and to verify the already existing terrestrial gravity data sets of different origin, quality and spatial resolution.
We will present the outcome of these mutual comparisons as well as the methodology and first results of a combined geoid solution using terrestrial and airborne gravity disturbances accomplished by GPS-levelling and satellite gravity data.