Latest results in strapdown airborne gravimetry using an iMAR RQH unit - DTU Orbit
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This paper summarizes the results of four recent airborne gravity campaigns, carried out between October 2013 and October 2015. For the measurements, a strapdown inertial measurement unit, type iMAR RQH 1003, was used in combination with a geodetic two-frequency GNSS receiver (Javad Delta). A centralized Kalman-Filter in combination with an RTS-smoother is used to estimate three-dimensional gravity disturbances, i.e. also including the deflections of the vertical (vector gravimetry). A thermal correction is applied to the QA2000 accelerometers in order to remove most of the long term drifts, relaxing the common requirement of an adjustment of the strapdown gravity data. Results were evaluated based on cross-over statistics, indicating standard deviations in the range from 1.0 to 1.4 mGal (without adjustment). This is an excellent result for strapdown gravimetry, clearly reaching the accuracy level of the classical instruments and thereby emphasizing the large potential of strapdown gravimetry for future campaigns

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