



Gravity field models derived from Swarm GPS data

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The Swarm satellites, with primary mission to measure Earth's Magnetic Field, continue to provide high-quality h1-SST data. We use these data to derive the time-varying gravity field of the Earth up to Spherical Harmonic degree and order 12, on a monthly basis since December 2013. We combine the gravity field solutions computed with the data of all three satellites, as provided by a number of institutes, namely at the Astronomical Institute (ASU) of the Czech Academy of Sciences (Bezděk et al., 2016), the Astronomical Institute of the University of Bern (AIUB, Jäggi et al., 2016) and the Institute of Geodesy (IfG) of the Graz University of Technology (Zehentner et al., 2015) and demonstrate that this uninterrupted time series of gravity field models are in good agreement with the temporal variations observed by the GRACE satellites. Therefore, these data can be used to study large-scale mass changes globally, e.g. i) in the context of low-latency applications, such as the European Gravity Service for Improved Emergency Management project (<http://egsiem.eu>), ii) in those months where GRACE solutions are not available, and iii) as an important source of independent information for mitigating the GRACE/GRACE Follow-On gap.