



Comparison of full-repeat and sub-cycle solutions in gravity recovery simulations of a GRACE-like mission

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Sampling the Earth from orbit leads to aliasing of high-frequency geophysical signals to lower frequencies and, eventually, into the recovered gravity field. Aliasing is a limiting factor for current gravity field missions and will remain a fundamental challenge to recovering time-variable gravitational signals for future missions. Beyond improving the so-called dealiasing models two strategies to mitigate the aliasing problem are considered: Satellite configuration design and alternative recovery strategies.

In this contribution, we assess a simulated GRACE-like scenario with two different solutions strategies for the gravity field recovery. One makes use of the full repeat period of a repeat orbit scenario, the other only takes sub-cycles into account. Both solutions are then compared to the input models through correlation analysis to investigate the aliasing behavior of different solution strategies. Moreover, the possibility of sub-cycle solution is discussed for further processing.