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User-driven update of a high-resolution geopotential model

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Almost every year, there is a lot of (not only) new gravity data from satellite altimetry available to the users. This is in contradiction to the situation over the lands where financial and time costs are usually much higher. Hence, it might be reasonable to update global gravity field models in specific areas with new data.

In this contribution, we outline a simple and user-driven concept for updating geopotential models over the oceans if relevant new data become available. The approach employs a grid-wise ellipsoidal harmonic analysis applied to gravity disturbance, while the resolution can achieve a higher maximum degree compared to recent combination models like EGM2008. The obtained harmonic coefficients represent global but regionally updated gravity information. As a test case, we present the concept using EGM2008 and DTU10.