



Making geodetic glacier mass balances available to the community – Progress and challenges in modifying the WGMS database

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The recent years have seen a sharp increase in the publication of geodetically derived glacier mass balances. Internationally coordinated glacier monitoring, however, has so far focused mainly on direct glaciological mass balance measurements. There is thus a need to collect geodetic glacier mass balance data in a standardized format and make the data available to the scientific community. This would allow easy access and data use for, e.g., assessment of regional to global scale glacier changes, re-analysis of glaciological mass balance series, evaluation of and comparison to, other data or model results.

It appears logical to build such a data archive where glaciological data are already routinely collected. In the framework of the ESA project *Glaciers_cci*, the World Glacier Monitoring Service (WGMS) has started an initiative to establish the expertise, the strategy and the infrastructure to make the increasing amount of geodetic glacier mass balance available to the scientific community. The focus is (i) on geodetic (glacier wide) changes as obtained from differencing digital elevation models from two epochs, and (ii) on point elevation change from altimetry.

Here we outline the chosen strategy to include gridded data of surface elevation change into the WGMS database. We describe the basic strategy using the netCDF4 data format, summarize the data handling as well as the standardization and discuss major challenges in efficient inclusion of geodetic glacier changes into the WGMS database. Finally, we discuss the potential use of the data and thereby highlight how the added geodetic data influence the calculation of regional to global averages of glacier mass balance.