

Interactive comment on “Hydrometeorological and gravity signals at the Argentine-German Geodetic Observatory (AGGO) in La Plata” by Michal Mikolaj et al.

Jeff Freymueller (Referee)

freymuel@msu.edu

Received and published: 14 May 2019

My comments are limited to minor corrections, as shown in the annotated manuscript. The data set looks to be complete and useful, and the descriptions are comprehensive.

Please ignore Fig. 1, a track changes version has been uploaded as supplement.

Please also note the supplement to this comment:

<https://www.earth-syst-sci-data-discuss.net/essd-2018-156/essd-2018-156-RC3-supplement.pdf>

Printer-friendly version

Discussion paper



Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-156>, 2019.

ESSDD

Interactive
comment

Printer-friendly version

Discussion paper





Hydrometeorological and gravity signals at the Argentine-German Geodetic Observatory (AGGO) in La Plata

Michał Mikolaj¹, Andreas Güntner^{1,2}, Claudio Brunini^{3,4}, Hartmut Wziontek⁵, Mauricio Gende⁶, Stephan Schröder¹, Augusto M. Cassino⁷, Alfredo Pasquare⁸, Marvin Reich¹, Anne Hartmann¹, Fernando A. Oreiro^{6,1}, Jonathan Pendiuk⁴, Luis Guarracino⁴, and Ezequiel D. Antokoletz²

¹GFZ German Research Centre for Geosciences, Section Hydrology, Potsdam, Germany

²University of Potsdam, Institute of Earth and Environmental Science, Potsdam, Germany

³Argentinean-German Geodetic Observatory, CONICET, La Plata, Argentina

⁴Facultad de Ciencias Astronómicas y Geofísicas Universidad Nacional de La Plata, La Plata, Argentina

⁵Federal Agency for Cartography and Geodesy (BKG), Leipzig, Germany

⁶Facultad de Ingeniería, Instituto de Geodesia y Geofísica Aplicadas Universidad de Buenos Aires, Buenos Aires, Argentina

⁷Servicio de Hidrografía Naval, Ministerio de Defensa, Argentina

Correspondence: M. Mikolaj (mikolaj@gfz-potsdam.de)

Abstract. The Argentine-German Geodetic Observatory (AGGO) is one of the very few sites in the southern hemisphere equipped with a comprehensive cutting-edge geodetic instrumentation. The employed observation techniques are used for a wide range of geophysical applications. The provided multi-compartmental data set provides gravity time series and selected gravity models together with the hydrometeorological monitoring data of the observatory. These parameters are of great interest to the scientific community, e.g., for achieving accurate realization of terrestrial and celestial reference frames. Moreover, the availability of the hydrometeorological products is beneficial to inhabitants of the region as they allow for monitoring of environmental changes and natural hazards including extreme events. The hydrological data set is composed of time series of groundwater level, modelled and observed soil moisture content, soil temperature, and physical soil properties and aquifer properties. The meteorological time series include air temperature, humidity, pressure, wind speed, solar radiation, precipitation, and derived reference evapotranspiration. These data products are extended by gravity models of hydrological, oceanic, La Plata Estuary, and atmospheric effects. The quality of the provided meteorological time series is tested via comparison to the two closest WMO sites where data is available only in an inferior temporal resolution. The hydrological series are validated by comparing the respective forward-modelled gravity effects to independent gravity observations reduced up to a signal corresponding to local water storage variation. Most of the time series cover the time span between April 2016 and November 2018 with either no, or only few missing data points. The data set is available at <https://doi.org/10.5880/GFZ.5.4.2018.001> (Mikolaj et al., 2018).

Copyright statement. This work is licensed under CC BY 4.0

