A compiled open-access geological map of Dronning Maud Land, Antarctica

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Geological mapping and investigation of the mountain chain in Dronning Maud Land (DML) has been carried out by a number of geologists from South Africa, Japan, India, Germany, Russia and Norway over the last 40-50 years. The produced geological maps of these teams are, for a large part, based on fairly old data which makes these maps inhomogeneous. The maps are at different scales, contain different levels of details, and the standards for classification of the rock units may also differ between the maps. This limits the ability to use these maps to draw an overview tectonic model of the evolution of Dronning Maud Land.

In this contribution, we present a newly compiled geological map and GIS database of the Dronning Maud Land. The map will be available soon as an open-access database, but the readers can test a version of it at: https://geokart.npolar.no/Html5Viewer/index.html?viewer=Geology_DML. The geological importance of the Dronning Maud Land to understanding the evolution of the southern parts of the Gondwana supercontinent was the main motivation factor as the DML is considered as the missing link between the geology of South Africa, Australia and Indian subcontinent.

The new database covers the area between 20° W and 45° E and was compiled at a scale level of 1:250 000. However, the database provides another scale level of 1:5 000 000 to put the DML in the regional framework of the Gondwana. The geological map is descriptive based on the new topographic dataset of the Landsat 8. The project was based at the Norwegian Polar Institute from 2014 to 2018 and supported by a research grant from the Ministry of Foreign Affairs, Norway.