Acceptance of draft agenda

Agenda was accepted as is.

Status of IGRF-13

We are three and a half years into the IGRF-13 model period. RMS differences with respect to CHAOS are slowly increasing due to unknown errors in the secular variation and secular acceleration. Errors are larger in regions with known higher secular acceleration.

Status of WDMAM

WDMAM v2.1 has been recently released. It includes numerous new datasets in various geographic regions. The WDMAM task force would like to transition leadership to the younger generation. This should be decided before or during the Lisbon meeting.

Data available for IGRF-14 field modeling

There are numerous satellite datasets available for IGRF-14, including Swarm, CSES, Cryosat-2, GOCE, GRACE, and ePOP. We also have data available from the ground observatory network.

IGRF-14 Task Force

The IGRF-13 task force was reviewed. Anyone who wants to join the task force should contact Ciaran Beggan.
IGRF-14 Schedule

The call for candidates will be sent in spring 2024, with candidate deliveries expected in September 2024. Evaluation of the candidates will occur in October to December 2024, with the IGRF-14 release occurring in January 2024. There will be a special issue in EPS for candidate papers.

There are plans to provide a Jupyter notebook for teams to submit model coefficients and perform some automated checks.

Revisiting the 1945/1950 DGRF

Will Brown has done an analysis comparing observatory data with IGRF, finding during 1940-1960 there are differences between the model and data. The discrepancy might be due to how the 5-year snapshots were built at that time. From 1900-1940, snapshots models were taken from a time-continuous model. From 1940-1960, DGRF coefficients were taken from individual snapshot models fitted to 5-year data windows, so they were not constrained to be smoothly varying in time. A discontinuity in the DGRF time series could cause problems in various applications, such as magnetic coordinate systems.

Richard Holme suggests not to change any DGRF, but to carefully document the issues – users largely won’t be concerned with these types of issues. Gauthier Hulot also says that users expect DGRF not to change, so it could cause unforeseen problems by revisiting past DGRFs. G. Hulot also suggests a way forward by creating a new “spline IGRF” product, where we could revisit past models in a completely different product, perhaps named the CGRF – Continuous Geomagnetic Reference Field.

Ciaran Beggan notes that a new product would also give an opportunity to increase the degree of the secular variation part of the model. This can be developed and discussed for Lisbon 2025.

Chris Finlay notes that in the 1940-1960 period, magnetic survey data was quite important, and working scientists today may not have the experience and knowledge working with surveys compared to the people back then.

Election of VMOD chair and co-chair

Ciaran Beggan (BGS) elected unopposed to the position of working group chair.

Clemens Kloss (DTU) elected unopposed to the position of working group co-chair.
Suggestions for sessions at next IAGA

1. Modelling, ground and space-based data and innovations from the IGRF-14 generation and for the future (Convenors: Ciaran Beggan, Clemens Kloss, Naomi, Frederik)

2. The future of WDMAM and crustal magnetic anomaly mapping (Convenors: Jerome Dyment, Will Brown)

3. Joint session with V-OBS and data based modeling (see V-OBS minutes, where convenors are already identified)

Any other business

The 10th anniversary Swarm science meeting will take place in April 2024 in Copenhagen.