

GEKCO Product

1. Data format

The surface current data at $\frac{1}{4}^\circ$ spatial resolution are available in NetCdf format, with one file per day. Each file contains the absolute dynamic topography (h) and surface wind stress (tx,ty) files used as input, and the surface currents as output. The files contain the total surface currents (u, v), but also the two components: surface geostrophic currents (ug , vg) and the wind-driven Ekman currents (ue, ve).

Each netcdf file's name is labelled: v_gekco_exp_b_YYYYMMDD.nc
with YYYYMMDD: date of the data (YYYY: year, MM: month, DD: day)

Each daily file includes 11 fields corresponding to the GEKCO product :

- **Longitude** in degrees: lon (vector field)
- **Latitude** in degrees: lat (vector field)
- **Absolute Dynamic Topography** (from AVISO DT_MADT_UPD) in (cm): h (matrix field)
- **Zonal wind stress** component (from NCDC Blended product) in (Pa): tx (matrix field)
- **Meridional wind stress** component (from NCDC Blended product) in (Pa): ty (matrix field)
- **Zonal geostrophic current** component in (cm/s): ug (matrix field)
- **Meridional geostrophic current** component in (cm/s): vg (matrix field)
- **Zonal Ekman current** component in (cm/s): ue (matrix field)
- **Meridional Ekman current** component (cm/s): ve (matrix field)
- **Zonal total surface current** : sum of zonal geostrophic and Ekman current component in (cm/s): u (matrix field)
- **Meridional total surface current** : sum of meridional geostrophic and Ekman current component in (cm/s): v (matrix field)

Note : the **flag value** for each field is 999 (missing values in the netcdf file)

2. Disclaimer and term of use policy

PLEASE READ THE FOLLOWING TERMS OF USE AND DISCLAIMER CAREFULLY BEFORE USING GEKCO DATA. BY ACCESSING OR USING GEKCO DATA, YOU AGREE TO THE DISCLAIMER AND ALL OTHER TERMS PROVIDED BELOW. IF YOU DO NOT AGREE TO THE DISCLAIMER AND ALL OF THESE TERMS, DO NOT ACCESS OR USE THESE DATA.

Disclaimer

All such items and materials are provided on an "as is" basis, and you are fully and solely responsible of these items and materials and for any results or consequences of their use.

Term of use

By using the GEKCO product, the users accept the following data policy. Commercial use is prohibited.

The GEKCO product is provided free of charge under the condition that it is exclusively used for scientific studies and experiments. This implies that:

- Copying the GEKCO product for use by third parties is forbidden
- Granting access to the GEKCO product for use by third parties is forbidden
- Commercial use of the GEKCO product, or products directly derived from them, is forbidden

We encourage that the users communicate to me any problem they find with the GEKCO product (send me an email to my address joel.sudre@legos.obs-mip.fr).

Finally, the dataset can be used freely for any scientific applications provided that I am acknowledged: “The GEKCO product used in this study was developed by Joël Sudre at LEGOS, France” and the publication to be cited as reference is:

Joël Sudre, Christophe Maes and Véronique Garçon, On the global estimates of geostrophic and Ekman surface currents, *Limnology and Oceanography: Fluids and Environments*, 2013, 3, pp 1–20, DOI [10.1215/21573689-2071927](https://doi.org/10.1215/21573689-2071927)

Joël Sudre,
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