

Data protocol



CoMet 1.0

for data measured and simulated
during

the Carbon Dioxide and Methane Mission for HALO

(CoMet)

in 2018



Preamble

The participants of the measurement activities during the Carbon Dioxide and Methane Mission for HALO (CoMet 2018)—in the remainder of this document the activities during this campaign will be referred to as *the mission*—agree on this data protocol.

This data protocol which addresses standard ethical scientific practice aims:

1. to ensure the fair use of the data,
2. to encourage the rapid dissemination of the scientific results,
3. to uphold the rights of the individual scientists,
4. to ensure the visibility and the integrity of the project,
5. to have all involved researchers treated equitably,
6. to encourage an orderly and timely analysis and publication of the data, and
7. to produce a central repository of the data to be released to the public domain including simulation data to the extent possible.

This data protocol formulates common scientific practice related to data - that has been collected and simulated in a joint effort by many scientists - as it has established in the field of atmospheric science for many decades.

§ 1 Definitions

In this document the term *principal investigator of the mission*—also called *Mission PI* or *PI of the mission*—refers to a person that is a member of the *data steering group* of the mission. This data steering group includes PIs from the following organizations:

- Andreas Fix , Anke Roiger and Patrick Jöckel (IPA, DLR Oberpfaffenhofen)
- Christoph Gerbig and Julia Marshall, (Max Planck Institute for Biogeochemistry, Jena)
- Heinrich Bovensmann (Institute of Environmental Physics, University of Bremen)
- André Butz and Klaus Pfeilsticker (Institute of Environmental Physics, Ruprecht-Karls-University, Heidelberg)

A *principal investigator of an instrument*—also called *Instrument PI* or *PI of an Instrument*—is a person in charge of a scientific instrument. A *principal investigator of a model* is a person in charge of a scientific model.

The term *participant of the mission* refers to a person that subscribed this document and was granted membership to the mission by the data steering group of the mission.

Members of the following institutions that mainly contributed to the campaign activities during CoMet are considered to get access to the data as participants of the mission:

- DLR Oberpfaffenhofen, Institute of Atmospheric Physics (IPA), Germany
- Max Planck Institute for Biogeochemistry, Jena, Germany
- Institute of Environmental Physics, University of Bremen, Germany
- Institute of Environmental Physics, Ruprecht-Karls-University, Heidelberg, Germany
- AGH-University of Science and Technology, Cracow, Poland



- Center for Isotope Research, Groningen, The Netherlands
- Institute for Atmospheric and Marine Research (IMAU), Utrecht University

The term *quicklook* refers to a visualization of preliminary data that is produced shortly after the respective data set was created.

§ 2 Data management

- (1) Data ownership: Data shall be property of the owner of the instrument (or the model for simulated data) which the data was created with.
- (2) Data repository: The repository for the data of the mission is the HALO-database (<https://halo-db.pa.op.dlr.de>) operated by the *Institute of Atmospheric Physics* of DLR.
- (3) Citation of data: Reference to a persistent identifier such as a digital object identifier (DOI) shall be applied to the data and/or parts of it.
- (4) Data format: The participants must provide the data in standard scientific data formats such as the NASA-Ames format or the NetCDF format. The usage of standard names for the observed entities according to the CF convention is encouraged.
- (5) Data quality: The analysis of the scientific data should conform to the *rules of good scientific practice* defined by the Deutsche Forschungsgemeinschaft (DFG). In particular, the analysis procedures must be transparently documented and the scientific data and the documentation necessary to understand the data must be stored for at least 10 years. Preservation of the data beyond 10 years is encouraged.

§ 3 Provision of Data/Data licensing and sharing

The CoMet community supports an open use of the data and collaborations among interested scientific communities. The following rules for provision of data/data licensing and sharing should provide guidelines for the smooth exchange of data.

(1) Provision of data: The data of the individual scientific instruments and models along with the corresponding documentation to understand the data shall be made available to all participants as soon as possible. The data should contain qualifiers of the status of the analysis (preliminary, final, etc.). Corrections and amendments to preliminary data must be made available to all participants as soon as possible. A delivery of the data and the documentation within **12 months** after the end of the mission is expected.

(2) Data licensing and sharing: During the first **24 months** after the mission the data is available to all participants of the mission. Regular data and science workshops will be held, where the CoMet participants report on their work and discuss possible collaborations. The participants commit to inform the data steering group about the submission of scientific articles. The data steering group is the point of contact in case of overlaps of scientific interests or other conflicts as described in §8.

Collaborations with scientists outside the CoMet core community are welcome. An **individual scientist wishing to collaborate**¹ can apply to get access to the data of interest. The associated scientist must provide a short written description of her/his aims to the data steering group of the mission described in § 1. This will be considered by the data steering group of the mission and access to the entire data set or a subset thereof will be granted after approval by the respective instrument or model PI.

¹ remark: possible collaborators to be considered but not limited to are those from e.g. LSCE, CNES, FMI, KIT, LMU, INOE, ESA, JAXA.



During the period of time as set forth in this paragraph any publication or forwarding of data to public, non-participants of the mission or non-associated scientists is prohibited. After the expiration of the period of time set forth in this paragraph § 3 (3) shall apply.

(3) After the period of time set forth in § 3 (2) the PI of an instrument or model must decide if the data, created with the instrument he/she is responsible for, shall be released to individual persons or to the public by one of the following options:

closed (not recommended): A potential data user can request the data of the instrument by contacting the respective instrument or model PI. The data can be made available to that person under the conditions defined in the agreement in Appendix A at the end of this data protocol. This agreement has to be signed by this person and returned to the respective instrument or model PI. The final decision to share or not to share the data with that person remains by the respective instrument or model PI.

or

open (recommended): The data is made public available under a suitable open license such as one of the Creative Commons licenses as recommended by the *Allianz der deutschen Wissenschaftsorganisationen*, see Appendix B and C.

In either case the receiver(s) of the data are obliged to accept the provisions as stipulated in §§ 4 et seq.

§ 4 Model studies and data updates

(1) Model results: Results of model studies using data of the mission shall be made available to the participants as soon as possible.

(2) Corrections: Corrections and amendments to preliminary results must be communicated to the participants of the mission as soon as possible.

(3) Recent version of data: The principal investigator of an instrument or model shall ensure that the data used are the best available at that time.

§ 5 Publications/Conference Contributions/Public meetings

Note that the following rules are to be applied in a manner consistent with the *rules of good scientific practice* defined by the Deutsche Forschungsgemeinschaft (DFG).

(1) Co-authorship: If data of the mission is used for publications (ex: scientific articles), digital media, conference contributions and/or in public meetings the lead author has to offer co-authorship to the instrument or model PI.

(2) Right to refuse: "In justified cases (e.g., wrong interpretation of measurements) the instrument or model PI has the right to refuse the usage of the data in publications, conference contributions and/or in public/ /meetings"

(3) Co-authors: The manuscript for any journal publication must be sent to the co-authors at least 3 weeks before submission with a copy to the data steering group of the mission.

Abstracts to contributions to conferences and/or public meetings shall be sent to the co-authors at least 1 week before submission with a copy to the data steering group of the mission.



The lead author has to take into account substantial comments from the co-authors before the submission of the manuscript or abstract. The co-authors and the data steering group of the mission shall be kept informed of the further progress of the review and publication.

(4) Usage of data: The lead author must have the explicit agreement of the instrument and model PI(s) for the usage of the data in publications, conference contributions and/or public meetings.

(5) Recent version of data: The PI of an instrument or model must ensure that the data of this instrument used in publications, conference contributions and/or public meetings is the best available at that time.

(6) Acknowledgement: The mission as well as funding sources must be acknowledged in a suitable way.

§ 6 Press releases

(1) Publications and/or press releases where the mission itself is the main subject—so called overview articles—must be approved by all PIs of the mission and all PIs of the instruments before submission. If a request for approval is automatically granted, if not answered within an adequate time interval of 10 days.

(2) Press releases relating to data, created during a mission, must be approved by the instrument and model PI(s) of the data.

§ 7 Collaborations

Effective and productive collaborations between the participants of the mission and other projects are encouraged.

§ 8 Avoidance of disputes

(1) Any disputes about the use of the data in particular with respect to publications will be resolved by the data steering group of the mission and approved by the instrument and model PIs.

(2) During the periods defined in § 3, when the data is still not public, it is encouraged to hold scientific meetings on a regular basis where all participants of the mission can present their ongoing work and their plans for future work with the data of the mission. This shall be made to avoid redundant work and parallel efforts which are both sources of potential disputes.

§ 9 Constraints

National and international laws or regulations might constrain the agreements of this data protocol.

In that case the data steering group of the mission has to inform the instrument and model PIs about those constraints. The data steering group of the mission and the instrument/model PIs shall find a mutual solution on a case-by-case basis.



The undersigned agrees to the conditions of the CoMet 2018 data protocol.

Signature of participant:

Date, place:

Name:

Position (PI, post-doc, student, etc.):

Address:

E-mail:

The data steering group of the mission grants the membership of the mission.

Signature of a representative of the data steering group of the mission:

Date, place:

Please return to CoMet principal investigator

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Appendix A

Agreement to receive the data of an instrument that was licensed according to §§ 2 and 3

(closed version)

I will receive a copy of a data set of the mission Carbon Dioxide and Methane Mission for HALO (CoMet)

I agree to the provisions stipulated in the Data protocol of the mission „ Carbon Dioxide and Methane Mission for HALO “ and the following common principle:

“If data of the mission is used for a publication, conference contribution and/or public meeting, co-authorship has to be offered to the instrument PI(s) of the data.”

I will not distribute this data set or parts of it.

Signature of the receiver of the data set:

Date, place:

Name:

Affiliation and address:

E-mail: