

## Halocarbon Database Meeting Report

This meeting's original invite list included members of the community that were considered to have been proactive in assembling datasets beyond the individual cruise/campaign. It was decided that a small group, with experience of halocarbon data and data management would be best suited to the rapid and effective creation of the database. Participants were Birgit Quack (Germany); Tom Bell (UK); Gwen Moncoiffé (UK); Carsten Schirnack (Germany); Carl Palmer (S. Africa); and Charlotte Jones (UK). Yoko Yokouchi (Japan), Lucy Carpenter (UK), Paul Palmer (UK) and Shari Yvon-Lewis (USA) were invited but unable to attend.

The aim of this meeting was to gather together a small group of experts in both halocarbon research and data management to discuss the issues associated with assembling an air and sea database of halocarbons. This product, which will involve a large amount of effort to assemble, will help to achieve an improved understanding of the processes driving the production of halocarbons in seawater and a better quantification of their air-sea flux. It will also meet part of a specific aim of COST Action 735 Working Group 1 to 'Compile existing databases of relevant parameters into a framework to produce the definitive dataset of air-sea fluxes'.

The meeting began with a welcome to Kiel from Birgit Quack, which was followed by each participant introducing themselves and their specific role/expertise relevant to the meeting. At this stage, Tom Bell noted the meeting that had been held the previous year on improving the inter-comparability of halocarbon data. The group agreed that any further outcomes of this intercalibration initiative should form an important part of the database quality control. Carl Palmer has made some progress toward producing a large-scale dataset and he presented the process he went through and his results. This was important information that we considered and related back to throughout the rest of the meeting.

We then discussed Birgit's work package in an EU-funded proposal (SHIVA: Stratospheric ozone; Halogens In a Varying Atmosphere) and an initial output she is required to deliver as part of this work. This work package aims to contribute to a new and improved estimate of halogen supply to the stratosphere by providing a data-based estimate of the sea-to-air flux of very short lived substances (particularly, but not exclusively, the bromocarbons) from tropical waters. This flux product/publication would be an output specific to the attendees of this meeting and would be made available to those modellers involved in the EU project by June 2011.

Charlotte Jones then presented some of the thoughts of Lucy Carpenter and Paul Palmer about the scientific potential of the database. It was noted at this stage that the database should be assembled for maximum benefit to the scientific community. It was agreed that a meeting involving the halocarbon community should be held in June 2010 to launch the database and to discuss the scientific potential and future products. This will bring added-value to the database initiative and widen the scientific potential of the database to the rest of the community. For example, we discussed how investigating and identifying possible predictive relationships for halocarbon distributions in the surface ocean was a possible use of the database. The group briefly discussed the implications this would have on how the database should be assembled.

During the decision-making part of the meeting, we discussed in detail how the database should be put together, what parameters it should be composed of, and the approach needed to achieve these aims. Gwen Moncoiffé (British Oceanographic Data Centre) presented her thoughts at this stage and was particularly helpful in identifying the key decisions that had to be made. Discussion focused heavily on identifying the 'essential' and 'ancillary (or desirable)' parameters for the database, as well as the relevant metadata that would be 'essential' and 'desirable' for its construction. Based on this discussion,

it was noted with regret that the data Carl had already brought together was not complete as some of the datasets he collected do not have a record of the depth/height and/or no metadata on sampling methodology. A lot of time was devoted to the data discussion (part (d) on the agenda), and it was decided to focus on this aspect of the meeting rather than the potential of the database for constructing a halocarbon climatology (part (e) on the agenda). This will be addressed in more detail at a future meeting, tentatively scheduled for February 2010.

Next, Carsten Schirnack presented the work he has been involved with in the pCO<sub>2</sub> community, the service(s) he could provide to facilitate the construction of the database and how it might interface with users of the resource. We also discussed and edited a list of potential data contributors and a letter/email that will be sent around the community. Finally we focussed on the project's key decisions, approach and timeline and identified actions for members of the initiative. A more detailed document of this has been produced and circulated within the group, but the key deadlines/milestones are as follows:

Initial core of data, including data from BODC, the Carpenter group, Butler et al. (2007), uploaded and assembled as the start-point for the large-scale database.	End of March 2009
Call (letter and email) to the community explaining project and requesting data	May 2009
Data submission to database	May 2009 onwards
Follow-up meeting of halocarbon database committee	Feb 2010
Publication of database and larger-scale meeting to discuss its scientific potential	June 2010
Flux product to stratospheric community involved in SHIVA	June 2011

Support for this meeting came from COST Action 735. Anyone interested in participating in the project is encouraged to contact Birgit Quack ([bquack@ifm-geomar.de](mailto:bquack@ifm-geomar.de)) or Tom Bell ([Thomas.Bell@uea.ac.uk](mailto:Thomas.Bell@uea.ac.uk)).

# Halocarbon Database Meeting Agenda

## *Aim:*

To discuss the issues associated with assembling an air and sea database of halocarbons with the express aim of better understanding the processes driving their production in seawater and a better quantification of their air-sea flux.

## *Timeframe:*

- On the **11<sup>th</sup> Feb.**, the meeting will begin at **0900hrs** prompt, breaking for the end of the day at **1730hrs**. We will then go and enjoy dinner together.
- On the **12<sup>th</sup> Feb.**, the meeting will recommence at **0900hrs** prompt and will finish at **1200hrs** for lunch.
- Both days will have a coffee break each morning and/or afternoon.
- The intention is to get through to approximately the end of (d), by the end of day one (11<sup>th</sup> Feb.).

## *Agenda:*

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|--|-----------------------|
| (a) Welcome and general introduction           | B. Quack and T. Bell  |
| (b) What previous work has been carried out?   | C. Palmer and T. Bell |
| (c) Future work/projects and their integration | B. Quack and C. Jones |
| (d) Data/Database specifics                    |                       |
| - data access and data co-operation            | B. Quack              |
| - database structure                           | C. Schirnack          |
| - data treatment – data intercalibration       | B. Quack              |
| - metadata requirements                        | G. Moncoiffe          |
| - ancillary data requests                      | T. Bell               |
| - data priorities (e.g. compounds, regions)    | T. Bell               |
| (e) Climatology discussion                     | T. Bell               |
| - previous climatological approaches, e.g. SST |                       |
| - approach used for DMS climatology            |                       |
| - validation                                   |                       |
| - other ideas?                                 |                       |
| (i) Outputs:                                   |                       |
| - website                                      |                       |
| - identification of under-sampled regions      |                       |
| - publication(s)                               |                       |
| - other?                                       |                       |
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