

GHG-CCI QSR Jan-Mar 2015

1. Project status

GHG-CCI project proceeds as planned and has nearly completed the first year of Phase 2. The 1st GHG-CCI Phase 2 Annual Review Meeting (ARM1) will be held at ESRIN, 31st of March to 1st of April 2015. No major problems have been identified. The main goal of the 1st year was to generate an improved data set of satellite atmospheric CO₂ and CH₄ retrievals, the Climate Research Data Package No. 2 (CRDP#2), including documentation. This goal has been achieved (see <http://www.esa-ghg-cci.org/> -> CRDP (Data)).

2. Impact of data sets in scientific community

The number of users (mid 2011 – mid March 2015) is approx. 360. Users are mostly interested in using the data to obtain emission estimates. However, there are also a number of other applications such as comparisons with Chemistry-Climate models (e.g., Shindell et al., ACP, 2013; Hayman et al., ACP, 2014). Many users, but not all, contact the GHG-CCI team and offer co-authorship or ask for feedback and how to acknowledge the delivered data. The number of peer-reviewed publications with GHG-CCI funding acknowledged is very high (status mid March 2015: 38).

3. Project outreach/promotion of data sets

The data are promoted via high-quality peer-reviewed publications (see <http://www.esa-ghg-cci.org/> -> Publications), conference presentations (e.g., EGU, AGU, IWGGMS, ...) and science meetings (e.g., GOSAT and OCO-2 scientific community meetings) and other means (e.g., ESA webstories, see below). Many users are requesting GHG-CCI data products (see above). Feedbacks are mixed: some users are contacting us by e-mail or circulate draft publications offering co-authorship, others only promise to do so (often we get these publications later for review). Questions are mostly technical. Some users have interesting but challenging applications in mind which are hardly possible to be addressed with existing sensors (e.g., many users are interested in data containing information on local emissions; in this case we inform the users that this is only possible with future missions such as CarbonSat).

4. Operational provision of data sets

The GHG-CCI data sets are generated and made available as planned (yearly updates with improved algorithms and, where possible, longer time series). The first GHG-CCI Phase 2 data set is CRDP#2) and is available from the GHG-CCI website as explained above.

5. Recent publications (not listed in previous reports)

Alexe, M., P. Bergamaschi, A. Segers, R. Detmers, A. Butz, O. Hasekamp, S. Guerlet, R. Parker, H. Boesch, C. Frankenberg, R. A. Scheepmaker, E. Dlugokencky, C. Sweeney, S. C. Wofsy, and E. A. Kort, Inverse modeling of CH₄ emissions for 2010–2011 using different satellite retrieval products from GOSAT and SCIAMACHY, *Atmos. Chem. Phys.*, 15, 113–133, doi:10.5194/acp-15-113-2015, 2015.

Reuter, M., M. Buchwitz, M. Hilker, J. Heymann, O. Schneising, D. Pillai, H. Bovensmann, J. P. Burrows, H. Bösch, R. Parker, A. Butz, O. Hasekamp, C. W. O'Dell, Y. Yoshida, C. Gerbig, T. Nehr Korn, N. M. Deutscher, T. Warneke, J. Notholt, F. Hase, R. Kivi, R. Sussmann, T. Machida, H. Matsueda, and Y. Sawa, Satellite-inferred European carbon sink larger than expected, *Atmos. Chem. Phys.*, 14, 13739–13753, doi:10.5194/acp-14-13739-2014, 2014.

Related ESA webstory: “Is Europe an underestimated sink for carbon dioxide?”. Link: http://www.esa.int/Our_Activities/Observing_the_Earth/Is_Europe_an_underestimated_sink_for_carbon_dioxide

Full publication list please see: <http://www.esa-ghg-cci.org/> -> Publications (note that peer-reviewed publications with GHG-CCI funding explicitly acknowledged are marked with (*)).

*** End of Report ***