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GHG-CCI Quarterly Status Report (QSR) #16

Reporting period: Jul-Sep 2014; Version: 8 September 2014

GHG-CCI QSR Jul-Sep 2014

1. Project status

Progress as planned (some details see below). A first progress meeting was held on 14 July 2014.

2. Data gathering, algorithm improvements, evolution product specification

All EO data for the creation of the new CRDP has been gathered and no issue with data quality has been reported. A new CRDP will be delivered end of September together with the SVR and updates to the URD, DARD, PSD (already available from webpage), SSD and ATBD.

3. Evolution in product Specification

The focus is on improving the algorithms used for the ECV products and the main changes are in the post-processing filtering, improving efficiency, use of improved LIB data, and improved treatment of aerosols.

Feedback from the climate research group has been implemented in the updates to the requirements for the GHG-CCI products (URD v3).

4. Round Robin (Algorithms Evolution)

For GHG-CCI, the “Round Robin” approach has been replaced by a “Baseline & Scientific Algorithms” approach, where the “Scientific algorithms” have to challenge the “Baseline algorithms”. Both algorithms will contribute to CRDP #2 and #3 and they will be assessed in the PVIR and CAR. The final decision will be at the end of year 2 of Phase 2.

5. International Scientific Cooperation

The project has strongly benefited from close international collaborations with the GOSAT and OCO teams and both teams have contributed to the round robin in phase 1 and they will continue to contribute to phase 2 of the project.

A very close co-operation also exists with the MACC-II/III project of the European Global Monitoring for Environment and Security (GMES/Copernicus) programme. Several GHG-CCI team members are also members of MACC-II/III GHG project and the GHG-CCI CRG leader F. Chevallier is also the leader of MACC-II/III GHG.

6. Future activities

The main focus will remain to further improve the algorithms and on preparing the next data release

7. User impact with Phase 1 products and feedback

Several new publications have been submitted that use GHG-CCI datasets (see below)

8. Project outreach/promotion of data sets and publications

Michael Buchwitz (GHG-CCI lead) has contributed to the ESA Earth Observation Summer School (<https://earth.esa.int/web/eo-summer-school/home>)

New papers under review:

A. Fraser, P. I. Palmer, L. Feng, H. Bösch, R. Parker, E. J. Dlugokencky, P. B. Krummel, and R. L. Langenfelds, Estimating regional fluxes of CO₂ and CH₄ using space-borne observations of XCH₄ : XCO₂, Atmos. Chem. Phys. Discuss., 14, 15867–15894, 2014

M. Reuter, 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. Nehrkorn, 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. Discuss.*, 14, 21829-21863, 2014

Alexe, M., Bergamaschi, P., Segers, A., Detmers, R., Butz, A., Hasekamp, O., Guerlet, S., Parker, R., Boesch, H., Frankenberg, C., Scheepmaker, R. A., Dlugokencky, E., Sweeney, C., Wofsy, S. C., and Kort, E. A.: Inverse modeling of CH₄ emissions for 2010–2011 using different satellite retrieval products from GOSAT and SCIAMACHY, *Atmos. Chem. Phys. Discuss.*, 14, 11493-11539, doi:10.5194/acpd-14-11493-2014, 2014.

Full list please see: <http://www.esa-ghg-cci.org/> -> Publications

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