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# First satellite-derived atmospheric $CO_2$ and CH4 Essential Climate Variable (ECV) data set from the Copernicus Climate Change Service (C3S)

Michael Buchwitz (1), Maximilian Reuter (1), Oliver Schneising (1), Heinrich Bovensmann (1), John P. Burrows (1), Hartmut Boesch (2), Jasdeep Anand (2), Rob G. Detmers (3), Ilse Aben (3), Otto P. Hasekamp (3), Cyril Crevoisier (4), Raymond Armante (4), and Dinand Schepers (5)

(1) University of Bremen, Institute of Environmental Physics / Remote Sensing (IUP/IFE), Bremen, Germany (michael.buchwitz@iup.physik.uni-bremen.de), (2) University of Leicester, Leicester, United Kingdom, (3) SRON Netherlands Institute for Space Research, Utrecht, Netherlands, (4) Centre National de la Recherche Scientifique (CNRS), Laboratoire de Météorologie Dynamique (LMD), Palaiseau, France, (5) European Centre for Medium-Range Weather Forecasts (ECMWF), Reading, United Kingdom

Previously, satellite-derived atmospheric carbon dioxide ($CO_2$) and methane (CH4) Essential Climate Variable (ECV) data sets have been generated and made available via the GHG-CCI project of ESA's Climate Change Initiative (CCI, http://www.esa-ghg-cci.org/). The last GHG-CCI data set, called Climate Research Data Package No. 4 (CRDP 4), covers the time period 2003-2015 and is available since February 2017. Currently, the production and provision of these data sets is being continued via the Copernicus Climate Change Service (C3S, https://climate.copernicus.eu/), which is implemented by ECMWF on behalf of the European Commission. The C3S satellite greenhouse gas (GHG) sub-project (C3S_312a_Lot6) is led by University of Bremen supported by University of Leicester, SRON and CNRS-LMD. The first Climate Data Record (CDR) data set produced and delivered within the C3S framework covers the time period 2003-2016 and consists of column-average dry-air mole fraction $CO_2$ and CH4 products, i.e. $XCO_2$ and XCH4, from SCIAMACHY/ENVISAT and TANSO-FTS/GOSAT. Furthermore, mid-tropospheric $CO_2$ and CH4 mixing ratios from IASI Metop-A and Metop-B are part of this data set and mid-tropospheric $CO_2$ from AIRS. These data products and their documentation will be made available in early 2018 via the Climate Data Store (CDS) of C3S. An overview about this new data set will be presented.