

Bremen, 25. November 2010

## **Greenhouse Gas Satellite Mission CarbonSat selected by European Space Agency ESA**

Bremen – During the last meeting of the ESA Program Board for Earth Observation on 23<sup>rd</sup>/24<sup>th</sup> November, the proposal for a greenhouse gas satellite mission “Carbon Monitoring Satellite” (CarbonSat), prepared under the scientific lead of the Institute of Environmental Physics (IUP) of the University of Bremen, was selected after a comprehensive scientific and technical evaluation by ESA and their Earth Sciences Advisory Committee out of 31 full proposals as one of two missions to compete for their Earth Explorer 8 launch opportunity in 2018. As a result ESA will proceed with a combined industrial feasibility and definition study (Phase A/B1) for CarbonSat.

CarbonSat’s scientific objectives are to globally measure very accurately the atmospheric amounts of the two most important greenhouse gases carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>), whose concentrations and atmospheric abundances are being strongly modified by anthropogenic activity, primarily fossil fuel combustion and land use change. Using the CarbonSat observations in combination with inverse modelling, the magnitudes of CO<sub>2</sub> and CH<sub>4</sub> sources and sinks from the local/suburban to regional scale will be determined and monitored in time. As a result of its imaging capability and high spatial resolution, the CarbonSat mission will make an important contribution to the attribution and discrimination of man-made and natural greenhouse gas emissions.

The proposal was prepared by a national and international scientific team led and coordinated by Dr. Heinrich Bovensmann, Institute of Environmental Physics (IUP), University of Bremen (Director Professor John. P. Burrows). The technical and engineering feasibility studies for the CarbonSat mission proposal were undertaken in collaboration with the industry prime OHB-System AG (Satellite System and Spacecraft bus) and Kayser-Threde (Satellite Payload). The successful mission proposal builds on the longstanding experience gained within IUP from the satellite based measurements of greenhouse gases using the satellite sensor SCIAMACHY (Principal Investigator Prof. Dr. John P. Burrows) aboard the ESA flagship mission ENVISAT, in combination with accurate retrieval algorithms (lead Dr. M. Buchwitz) and very precise ground-based reference measurements of greenhouse gases (Prof. J. Notholt).

The preparation of the mission proposal was financially supported by the State of Bremen (WFB), University of Bremen and the German Space Agency DLR from funds of the German Ministry of Economy.

### **For further information and contact:**

Links:

<http://www.iup.uni-bremen.de/carbonsat/>  
[http://www.esa.int/esaCP/SEMD9AGMTGG\\_index\\_0.html](http://www.esa.int/esaCP/SEMD9AGMTGG_index_0.html)

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