

Press Release

Take-Off for PEGASOS

Jülich scientists conduct research on climate in Europe using Zeppelin NT

Jülich/Friedrichshafen, 4 May 2012 – The longest deployment of the Zeppelin NT for climate research so far was officially launched today in a campaign coordinated by scientists from Jülich. For a total of twenty weeks, the airship will fly across Europe to measure the composition of the air above the Netherlands, Italy, the Adriatic and finally, in 2013, Finland. The measurement flights are part of the pan-European "PEGASOS" large-scale project, which involves twenty-six partners from a total of fourteen European countries and Israel investigating relationships between atmospheric chemistry and climate change. Federal Minister of Education and Research Annette Schavan praised the campaign at the official launch in Friedrichshafen. "The European large-scale project PEGASOS and the research flights with the Zeppelin NT make an important contribution to climate protection and modern sustainability research," said Schavan. Robert-Jan Smits, the European Commission's Director-General for Research and Innovation, referred to the project funded by the EU under its 7th Framework Programme as decisive for a joint European strategy to improve air quality and better fight climate change.

Scientists from Jülich are using the Zeppelin NT as a research platform for the third time – but it is the first time their campaign takes them across Europe. The two previous campaigns in 2007 and 2008 were funded by the Federal Ministry of Education and Research, and flights took place primarily in the Lake Constance region, where the climate scientists developed and tested the measuring instruments with which the Zeppelin is now equipped. During the current campaign, the scientists will use three different sets of measuring equipment to have a closer look at two actors in particular that can be found in atmospheric layers close to the ground: hydroxyl radicals (OH radicals), also referred to as the "detergent of the atmosphere", and minute aerosols. Data on their formation and their contribution to climatic processes are expected to provide researchers with new insights, amongst others on the atmosphere's ability to cleanse itself.

**Forschungszentrum Jülich GmbH
in the Helmholtz Association
52425 Jülich, Germany**

Corporate Communications
Tel: +49 2461 61-4661
Fax: +49 2461 61-4666

info@fz-juelich.de
www.fz-juelich.de

Thanks to the unique flight characteristics of the Zeppelin NT, the Jülich researchers can now also observe these processes in the region of the atmosphere that is decisive for them, the planetary boundary layer at an altitude of up to about 2000 metres. It is in this chemically very reactive, but as yet little investigated region that the fate of most of the pollutants emitted on the earth's surface is decided. Information about this region is therefore necessary to understand the atmospheric processes in detail and to verify model concepts. The Zeppelin NT can float slowly at this altitude, hover in the air, ascend and descend vertically, and fly for up to 24 hours. During this campaign it carries measuring equipment weighing more than a tonne. It thus ideally complements measurements by aircrafts and fixed ground stations.

The airship is currently being converted into a research Zeppelin. From mid-May, the refitted Zeppelin NT will embark on a two-week journey to Cabauw in the Netherlands – always accompanied by an international team of fifteen scientists and technicians. During the five-week mission beginning in June, the airship will take the east route around the Alps to Italy, where measurements will be taken in the Po Valley and above the Adriatic in cooperation with Italian researchers. On the return flight to Friedrichshafen, the Zeppelin will take the west route around the Alps via France. Finally, in April 2013, the atmospheric researchers will set out towards Northern Europe on another two-month mission, heading for Hyytiälä in Finland. Both the mission routes and the measuring locations have been coordinated with existing ground measuring stations. In this way, the researchers can directly compare data from the flight with stationary measurements.

The Zeppelin campaign is part of the European **Pan-European-Gas-AeroSOI-Climate Interaction Study**, or PEGASOS for short, which is funded by the European Commission under its 7th Framework Programme for Research. The campaign will measure the influence of atmospheric chemistry on climate change and aims to clarify the decisive processes. The findings will provide a scientifically sound basis for climate protection measures throughout the EU and thus for improving air quality taking into account its impact on climate change. Global climate policy will benefit from the results of the project as well, because project partners are also involved in the work of the UN's Intergovernmental Panel on Climate Change (IPCC).

Forschungszentrum Jülich GmbH
in the Helmholtz Association
52425 Jülich, Germany

Corporate Communications
Tel: +49 2461 61-4661
Fax: +49 2461 61-4666

info@fz-juelich.de
www.fz-juelich.de

Quotes on the launch of the Zeppelin campaign as part of PEGASOS:

Prof. Dr. Annette Schavan, Federal Minister of Education and Research:

“The European large-scale project PEGASOS and the research flights with the Zeppelin NT make an important contribution to climate protection and modern sustainability research. Investigating and protecting the climate are tasks that can only be undertaken as part of international collaborations. PEGASOS is a particularly impressive example of successful cooperation in European research policy. The Zeppelin NT and scientists from Forschungszentrum Jülich are making a decisive contribution to this endeavour.”

Robert-Jan Smits, Director-General for Research and Innovation, European Commission:

“Air pollutants bring with them high environmental and health costs. PEGASOS has been launched to give us a better understanding of the chemistry going on above our heads and allow us to draw conclusions for our air quality and climate policies.”

Prof. Spyros Pandis, Ph.D., PEGASOS Project Coordinator:

„One of the unique elements of the campaign is its coverage both in space and time spanning a large fraction of Europe. It promises to be the most comprehensive regional air quality campaign ever in Europe and probably in the world. Our goal is to make the corresponding dataset a point of reference for international air quality research.”

Thomas Brandt, CEO of Zeppelin Luftschifftechnik GmbH & Co.:

“Since its first mission in 2007, the Zeppelin NT has become an indispensable tool for climate researchers at Forschungszentrum Jülich. We are very proud to be able to make a contribution towards analysing chemical processes in the atmosphere. In this third project, we present the Zeppelin NT and its special features as a multifunctional mission platform on the European stage, and we are looking forward to continuing to play an active role in promoting climate protection in the future.”

Prof. Dr. Andreas Wahner, Director at the Institute of Energy and Climate Research, Forschungszentrum Jülich:

“The Zeppelin NT is a unique research platform: it perfectly complements measurements from fixed ground stations and high-altitude aircraft – and it delivers data from the most chemically active layer of air in the atmosphere, roughly the bottom 2000 metres. For us, the fact that it’s now possible to acquire data from across Europe as part of PEGASOS and to integrate them with our partners’ measurements takes climate research to a new level. It’s an outstanding opportunity for our scientific work on atmospheric

**Forschungszentrum Jülich GmbH
in the Helmholtz Association
52425 Jülich, Germany**

Corporate Communications
Tel: +49 2461 61-4661
Fax: +49 2461 61-4666

info@fz-juelich.de
www.fz-juelich.de

chemistry, and at the same time, it's an important step on the path towards a European climate policy."

Prof. Dr. Achim Bachem, Chairman of the Board of Directors of Forschungszentrum Jülich:

"Research at Forschungszentrum Jülich aims to provide a major contribution to the sustainable restructuring of our energy and economic system. Nearly half of our budget is connected with research for energy and the environment. We are particularly proud of our climate research. The PEGASOS project with the Zeppelin NT will help us to better understand processes in the atmosphere over Europe and thus to maintain the quality of life for future generations."

Further information:

Current pictures:

http://www.fz-juelich.de/portal/DE/Presse/Mediathek/atmosphaerenforschung/zeppelin12/_node.html

PEGASOS project:

<http://pegasos.iceht.forth.gr/>

Blog on the Zeppelin campaign:

<http://eu-pegasos.blogspot.de/>

Detailed flight plans for the 2012 campaign (for download in Google Earth):

<http://eu-pegasos.blogspot.de/2012/03/planned-transfer-routes-for-west.html>

Jülich climate research with the Zeppelin NT:

http://www.fz-juelich.de/portal/EN/Research/EnergyEnvironment/ClimateResearch/zeppelin/_node.html

Forschungszentrum Jülich, Institute of Energy and Climate Research, Troposphere (IEK-8) (in German):

http://www.fz-juelich.de/iek/iek-8/DE/Home/home_node.html

Zeppelin NT (in German):

<http://www.zeppelinflug.de/startseite.html>

Science Year 2012 – "Project Earth – Our Future"

<http://en.zukunftsprojekt-erde.de/>

Information on the EU's Framework Programme for Research (FP7):

http://cordis.europa.eu/fp7/home_en.html

Information on the European Commission, Research and Innovation (RTD), Environment:

http://ec.europa.eu/research/environment/index_en.cfm?

**Forschungszentrum Jülich GmbH
in the Helmholtz Association
52425 Jülich, Germany**

Corporate Communications
Tel: +49 2461 61-4661
Fax: +49 2461 61-4666

info@fz-juelich.de
www.fz-juelich.de

Contacts:

Prof. Andreas Wahner
Institute of Energy and Climate Research – Troposphere (IEK-8)
Tel: +49 2461 61-5932
Email: a.wahner@fz-juelich.de

PD Dr. Astrid Kiendler-Scharr
Institute of Energy and Climate Research – Troposphere (IEK-8)
Tel: +49 2461 61-4185
Email: a.kiendler-scharr@fz-juelich.de

PD Dr. Thomas Mentel
Institute of Energy and Climate Research – Troposphere (IEK-8)
Tel: +49 2461 61-6921
Email: t.mentel@fz-juelich.de

Press contacts:

Forschungszentrum Jülich:

Dr. Barbara Schunk, tel. +49 2461 61-8031, b.schunk@fz-juelich.de
Erhard Zeiss, tel. +49 2461 61-1841, e.zeiss@fz-juelich.de

Forschungszentrum Jülich...

... pursues cutting-edge interdisciplinary research addressing pressing issues facing society today while at the same time developing key technologies for tomorrow. Research focuses on the areas of health, energy and environment, and information technology. The cooperation of the researchers at Jülich is characterized by outstanding expertise and infrastructure in physics, materials science, nanotechnology, and supercomputing. With a staff of about 4 700, Jülich – a member of the Helmholtz Association – is one of the large research centres in Europe.

**Forschungszentrum Jülich GmbH
in the Helmholtz Association
52425 Jülich, Germany**

Corporate Communications
Tel: +49 2461 61-4661
Fax: +49 2461 61-4666

info@fz-juelich.de
www.fz-juelich.de