European Geosciences Union

General Assembly

Vienna, Austria, 24-29 April 2005

EGU Press Communication	EGU Contact: Dick van der Wateren
24 April 2005	egu.press@copernicus.org
Dick mobile:	+31 (0)6-54604741
Peter mobile:	+31 (0)6-52057685

During the whole week, both Press Officers, Dick van der Wateren and Peter Vlam will be available to assist tracking down people for interviews and other requests. Do not hesitate to ask us for any help.

Press Room Sessions

Abstracts

These pages contain short descriptions of the press conferences that will take place during EGU 2005. To find other topics of interest, please go to the Press Abstract Overview, where you will find a somewhat shorter overview of the overwelming conference programme.

We also draw your attention to the Media Tips, which will be regularly updated.

We provide a Press Kit containing recent publications by scientists who give a press conference. These will be on cd as well as on the computers in the Press Room (including late additions).

Monday 25 April 2005, 10-11

Arctic Climate Change

Recently, alarming news about the effects of climate change on the North Pole region came out. Sea ice is dwindling, polar bears become extinct, methane is released from decaying permafrost. There seems to be little cause for optimism. What will be the effects of Arctic environmental change on the rest of the world?

There is growing evidence that the climate of the polar regions is changing rapidly as an element in the global warming process. In the northern hemisphere there is a marked warming trend, enhanced by the ice-albedo feedback mechanism, and also a cyclic variability associated with the Arctic Oscillation. This manifests itself in changed atmospheric circulation patterns, changes in air temperature and precipitation, and changes in sea ice thickness, ocean structure, glacier mass balance, snowlines and permafrost depth.

Peter Wadhams will report on recent trends in changing sea ice thickness. Since 2003 he and colleagues have been developing a technique to monitor the mean ice thickness over the whole Arctic for long periods by a network of satellite-tracked buoys. Work in 2003 was done from an ice camp in the Beaufort Sea and from FS "Polarstern". In May 2004 an ice camp was established north of Ellesmere Island from which 4 buoy arrays were deployed, with a fifth added in August in Fram Strait.

Hugues Goosse will discuss his recent work investigating the causes of sea ice volume variations for the period of 1955 to 1997 with the use of computer simulations. The largest changes in ice thickness appear to occur in the central Arctic. This is largely the result of oceanic heat transport between Iceland and Norway. The time evolution of the ice volume appears well correlated with the low-frequency variations of the North Atlantic Oscillation (NAO). Another important source of ice volume variability is the link between NAO and Fram Strait ice export.

He will also be able to comment on the causes of differences between climate models. Together with Dutch and US colleagues he has run a 3D climate model for the last 1000 years with input from natural as well as human induced climate forcing.

participants

Peter Wadhams
Laboratoire d'Oceanographie de Villefranche, Villefranche-sur-Mer, 06230, France
p.wadhams@damtp.cam.ac.uk

Hugues Goosse
Université Catholique de Louvain
Institut d'Astronomie et de Géophysique G. Lemaître
Chemin du Cyclotron, 2
B-1348 Louvain-la-Neuve, Belgium
hgs@astr.ucl.ac.be

Related Sessions

CL5 Climate of the Polar Regions, Monday, 25 April 2005, 14:30-17:00, Lecture Room 6 (F1).

Monday 25 April 2005, 11-12

SMART-1: first results at the Moon and future lunar exploration

35 years after the first Apollo lunar landing, the small European probe SMART-1 opens the way for a fleet of new lunar missions. SMART-1 data will address fundamental questions about the origin and evolution of the Earth-Moon system, and will prepare the next international exploration steps by Japan, China, India, Europe and the new US space program.

Bernard H. Foing, Manuel Grande, Jean-Luc Josset and members of SMART-1 Science Team will present the status of the mission and first results, including stunning new images of the Moon, and first data from the X-ray instrument mapping lunar chemical composition.

The team will describe the challenges of the mission since its launch in September 2003, its safe arrival at the Moon, the first lunar results and science plans for the mission extended until august 2006.

The SMART-1 team will give project and first instruments lunar results, followed by questions/answers sessions with :

- Prof. Bernard H. Foing, Chief scientist & SMART-1 project scientist , ESA space science dept; Director , International Lunar Exploration Working Group,
- Prof. Manuel Grande, Rutherford Appleton Lab, Uk, PI D–CIXS X-ray spectrometer,
- Dr Jean-Luc Josset, Director , SPACE-X Exploration Institute, CH , PI AMIE camera.
- Other scientific and technical experts from ESA and the SMART-1 team will be available.

Links & Email adresses

Bernard.Foing@esa.int, jean-luc.josset@space-x.ch, m.grande@rl.ac.uk

SMART-1 www.sci.esa.int/smart-1/

SMART-1 Search for Lunar Peaks of Eternal Light | link

SMART-1 Mission approved | link

A short SMART-1 paper can be found in the Press Kit cd-rom

Related Sessions

PS1.4 New Lunar Results and the future programme, Thursday, 28 April 2005, 08:30-10:00, Lecture Room 13 (N).

Monday 25 April 2005, 14-15

EPICA, ice coring in Antarctica

The European Project for Ice Coring in Antarctica (EPICA) has revealed climate data going back further than any other ice drilling project. This has produced new insights in the way greenhouse gases, temperature and snow accumulation and atmospheric circulation control growth and decay of the Antarctic Ice Sheets.

EPICA is drilling two cores to bedrock, one at Concordia Station, Dome C (75º 06' S, 123º 21' E), the other at Kohnen Station in Dronning Maud Land (DML) (75º 00' S, 00º 04' E).

The Dome C drilling aims to retrieve a record covering a time period that is as long as possible. Currently the Dome C ice core covers already about 800,000 yr, doubling the period for which ice core data have been available so far. With completion of the drilling, at a depth of 3270.2 m, this is extended to about 900,000 yr.

The DML drilling aims to retrieve a high resolution record of at least one complete glacial-interglacial cycle at a site facing the Atlantic Ocean. For the DML ice core data is already available covering the last approximately 180,000 yr and drilling will continue for another 300 m. Because of higher precipitation rates at this site, the core produces a climate record of unprecedented resolution. The great advantage of this site is that the ice record can be tied directly to the Atlantic Ocean record.

In his presentation Dominique Raynaud will focus on the description of the most recent records and on the comparison between the marine and ice archives.

participants

Dominique Raynaud
Laboratoire de Glaciologie et
Géophysique de l'Environnement
CNRS / UJF
Saint-Martin-d'Hères, France
raynaud@lgge.obs.ujf-grenoble.fr

Related Session

CL13/CL29 EPICA ice cores and Quaternary Earth System Dynamics, Tuesday, 26 April 2005, 8:30 - 17:00, Lecture Room 6 (F1).

Monday 25 April 2005, 16-17

Arctic Ozone Loss

The Arctic winter of 2004/2005 has been unusually cold. This probably led to record ozone loss in the Arctic stratosphere this winter. Mid-March, Norwegian scientist Geir O. Braathen said: *'The point is that ozone is being destroyed as we speak'*.

Ozone loss is caused by chemical reactions that take place primarily on the surface of polar stratospheric clouds, ice particles, or liquid droplets, which form at high altitudes in the extreme cold of the polar stratospheric vortex. The number of particles that form, and thus the amount of chemical ozone destruction, is extremely sensitive to small changes in stratospheric temperature.

Even small amounts of stratospheric cooling can greatly increase ozone loss. Chlorine is derived from manmade chlorofluorocarbons (CFCs), which have slowly migrated to the stratosphere and are a major source for the ozone loss. International policy decisions, including several amendments to the Montreal Protocol of 1987 has been taken to accelerate the phase out of CFCs. (After the website of the Norwegian Institute for Air Research)

Florence Goutail, Geir O. Braathen, Georg Hansen and Markus Rex will report on the very latest results of stratospheric ozone observations that will contain updated information only a few days old.

participants

Florence Goutail
Service d'Aeronomie CNRS BP 3
Route des Gatines
91370 Verrieres-le-Buisson, France
florence.goutail@aerov.jussieu.fr

Geir O. Braathen
Norwegian Institute for Air Research
P.O. Box 100
N-2027 Kjeller, Norway
geir@nilu.no

Georg Hansen
Norwegian Institute for Air Research
Tromsø & Kjeller, Norway
georg.h.hansen@nilu.no

Markus Rex
Alfred Wegener Institute for Polar and Marine Research
Potsdam, Germany
mrex@awi-potsdam.de

Related Session

AS3.05 Polar Ozone Tuesday, 26 April 2005, 13:30 - 15:00, Lecture Room 4.

Tuesday 26 April 2005, 9-10

Cassini-Huygens Mission to Saturn and Titan

The Cassini-Huygens mission to Saturn and Titan has already returned a wealth of new data revealing a more complex and dynamic system than Voyager and Pioneer suggested. Cassini-Huygens went into orbit around Saturn on 30 June 2004. Complementary Earth-based observations were obtained during the Saturn approach phase and the early in-orbit phase. The Huygens mission returned stunning data from Titan in mid-January 2005. Coordinated ground based observations of Titan conducted around the entry are expected to provide data set complementary to that returned by Huygens.

The first images that Huygens sent back after its touchdown on Titan's muddy surface revealed a world that has very much in common with our Earth. Titan shows evidence of all the processes that also shape the Earth, precipitation, erosion, fluvial activity and sedimentation. Saturn's largest moon differs from our world only in the medium that does the shaping, methane instead of water – and the surface temperature, of course, -180 degrees C.

In the meantime, Cassini continues to send back images and other data about Saturn, its rings and moons.

Jean-Pierre Lebreton, Project Scientist for ESA's Huygens probe, and Dennis Matson, NASA Project Scientist for the Cassini mission, will show new material from Saturn and Titan and discuss the implications of these results.

participants

Jean-Pierre Lebreton
RSSD/SCI-SB
ESA/ESTEC
Keplerlaan 1
2200 AG Noordwijk, the Netherlands
jean-pierre.lebreton@esa.int

Dennis Matson
MS 230-205
Jet Propulsion Laboratory
4800 Oak Grove Drive
91109 Pasadena, CA 91109, USAUnited States

Related Sessions

US9/PS1.5 Titan - Huygens - Cassini: First Results, Monday, 25 April 2005, 08:30 - 19:30, Lecture Room: Hall D.

Tuesday 26 April 2005, 10-11

Mud Volcanoes, Methane Seeps and Microbial Processes

Mud volcanoes are deep sea environments hosting a variety of exotic life forms. These include animals and microbes that exploit the energy from methane and other hydrocarbons, which bubble up at these sites. Antje Boetius (MPI, Bremen), Jean Paul Foucher (Ifremer, Plouzane, France), Ian MacDonald (Texas), Jürgen Mienert (University of Tromsø) and Mandy Joye (University of Georgia, USA) will report on their recent expeditions and show some spectacular footage.

What is new:

Session BG3.02 sheds light on the question as to which processes create the special deep water habitats that have been recently detected at active submarine mud volcanoes. We call a mud volcano active when it expels gas, fluids and mud from reservoirs buried deep in the seafloor upwards into the water.

Several exploratory expeditions have just been carried out to continental margins around the world. The goals were to investigate the contribution of mud volcanoes to emission of the greenhouse gas methane, and to analyze the strange life associated with mud volcanism. Novel types of microorganisms and associated fauna were found which are adapted to using the subsurface energy delivered by mud volcanism. But also new geological structures have been found, such as asphalt mud volcanoes, deep-sea brine pools, gas channels, microbial reef systems. The first results of these investigations are reported in session BG3.02 and also during the press conference.

A new 6th Framework program of the European Commission, the Integrated Project HERMES (= Hot spot ecosystem research of margins of European Seas) has started 1st April 2005 and will investigate - amongst other novel ecosystems - ocean life at mud volcanoes and other cold seep ecosystems on Europe's margins. HERMES is one of the largest deep-water research project ever, including almost 40 scientific and industry partners. (See paper in Oceanography by Weaver et al. 2005.)

contact

Prof. Dr. Antje Boetius
Max Planck Institute for Marine Microbiology
Microbial Habitat Group
Celsiusstr. 1
28359 Bremen, Germany
aboetius@mpi-bremen.de

Related Session

BG3.02 Methane fluxes on continental margins: budgets and controls, Wednesday, 27 April 2005, 08:30-17:15, Lecture Room 12.

Tuesday 26 April 2005, 11-12

Microbes and Smokers

This press conference is about newly discovered microbial life forms at submarine hot springs ('smokers') at the Mid Atlantic Ridge. It features Antje Boetius (MPI, Bremen), Nadine Le Bris (Ifremer) and Chris German (Southampton Oceanography Centre), who bring along spectacular images from the ocean floor (see the handouts).

Recently, new types of chemosynthetic ecosystems have been identified, where microbial organisms transform the energy from fluxes of inorganic chemicals to other types of energy, which can be utilized by animals. These habitats include hydrothermal vents with high fluxes of hydrogen, methane, sulfide and/or reduced iron.

Unfortunately, very little is known on the actual amount of the fluxes of these chemicals and their relevance to element cycles. Antje Boetius and colleagues have now formed an international working group, to bring together scientists developing under water technologies to detect and measure fluxes of energy from deep earth. Session BG6.06 presents first results from such biogeochemical investigations.

One focus of the work is on the distribution of novel microorganisms, their genetic potentials and influence on mineralization processes. New technologies are presented which allow the in situ investigation of microbial interaction with hydrothermal and cold seep fluids. These microbes could be very important in precipitation of minerals, and as primary producers in deep-water chemosynthetic habitats.

In a week from now the German research vessel METEOR visits hydrothermal vents at the Mid Atlantic Ridge for first in situ measurements of oxygen, methane, CO_2, hydrogen and sulfide fluxes at hydrothermal vent systems as well as for investigation of the genetic potential of the microorganisms relevant in these fluxes. These investigations are part of the InterRidge program and contribute also to new Census of Marine Life (CoML) projects.

participants

Prof. Dr. Antje Boetius
Max Planck Institute for Marine Microbiology
Microbial Habitat Group
Celsiusstr. 1
28359 Bremen, Germany
aboetius@mpi-bremen.de

Dr Nadine Le Bris
Ifremer
Laboratoire Environnement Profond
Brest, France
Nadine.Le.Bris@ifremer.fr

Prof. Chris German, MBE
Southampton Oceanography Centre
European Way
Southampton, SO14 3ZH, UK
cge@soc.soton.ac.uk

Related Sessions

BG6.08 Methods, tools and strategies for biogeochemical investigation of chemosynthetic deep water systems, Tuesday, 26 April 2005, 13:30-15:00,Room 19.

Tuesday 26 April 2005, 16-17

The Sumatra earthquake and the Indian Ocean tsunami

The European Geosciences Union is hosting a special symposium on the Sumatra Earthquake and the Indian Ocean Tsunami of 26 December 2004. The special event is intended to bring together leading scientists who have investigated various aspects of this extreme natural phenomenon, including the devastating effects. Organized by geoscientists, the symposium is intended to inform other scientists, students, the media, decision makers and concerned people.

Presentations will cover different topics, including: (i) analysis of the investigations and monitoring activities conducted during and after the event, (ii) reports on field observations from some of the most devastated areas, (iii) analysis and modelling of the event, (iv) description of local, regional and planetary effects, (v) comparison with other similar catastrophic events, and (vi) a synthesis of the lessons learned for warning and tsunami hazard mitigation.

At the press conference, scientists will be present who have done research in the area, including several tsunami experts:

Volodya Kossobokov, IUGG Commission on Geophysical Risk and Sustainability;

Remko Scharroo, National Oceanic and Atmospheric Administration;

Jurjen Battjes, Delft University of Technology;

Stefano Tinti, former chair of EGS Working Group of Natural Hazards;

Efim Pelinovsky, Secretary for Sea and Ocean Hazards;

Carlo Laj, EGU educational committee.

Union Symposium 7:

oral presentations

poster presentations.

Related Sessions:

ES4 Natural Risks Assessment (NaRAs) Workshop for Teachers, Monday 25 April, 08:30, Lecture Room R1.

participants

Remko Scharroo
NOAA / Laboratory for Satellite Altimetry
1335 East West Hwy,
Silver Spring MD, USA
remko.scharroo@noaa.gov

Jurjen Battjes
Faculty of Civil Engineering and Geosciences
Delft University of Technology
The Netherlands
j.battjes@ct.tudelft.nl

Fausto Guzzetti
CNR - IRPI
via della Madonna Alta 126
06128 Perugia, Italy
Fausto.Guzzetti@irpi.cnr.it

Stefano Tinti
Department of Physics, Sector of Geophysics
University of Bologna
Viale Carlo Berti Pichat, 8
40127 Bologna, Italy
steve@ibogfs.df.unibo.it

Efim Pelinovsky
Laboratory of Hydrophysics and Nonlinear Acoustics
Institute of Applied Physics
Russian Academy of Sciences
46 Uljanov Street, Nizhny Novgorod, Russia
pelinovsky@hydro.appl.sci-nnov.ru

Volodya Kossobokov
International Institute of Earthquake Prediction Theory and Mathematical Geophysics
Russian Academy of Sciences
RUSSIAN FEDERATION
volodya@mitp.ru
Institute de Physique du Globe de Paris
FRANCE
volodya@ipgp.jussieu.fr

Carlo Laj
Laboratoire des Sciences du Climat et de l'Environnement (LSCE)
Unité Mixte CEA-CNRS
Avenue de la Terrasse
91198 Gif-sur-Yvette Cedex, France
Carlo.Laj@lsce.cnrs-gif.fr

Wednesday 27 April 2005, 15-16

Latest Results from Mars

Mars Express, the European mission to Mars, is returning one spectular result after the other. Altough the one-billion-Euro question "Is, or has there been, life on Mars?" remains unsolved, exciting new evidence of rivers, seashores, volcanism, ice sheets and methane keeps flowing in.

This press conference features several of the Principal Investigators on the Mars Express team. The Mars Express PI's will discuss the following topics:

- "Mars: a wet or a dry planet? "by Jean-Pierre Bibring (OMEGA)
- "Age of Martian volcanism" by Gerhard Neukum (HRSC)
- "Atmospheric escape: when and how much?" by Rickard Lundin (ASPERA)
- "Water vapour and ozone on Mars" by Jean-Loup Bertaux (SPICAM)

The instruments on board are:

OMEGA Visible and Infrared Mineralogical Mapping Spectrometer, OMEGA is building up a map of surface composition in 100 metre squares. It determines mineral composition from the visible and infrared light reflected from the planet's surface.

High Resolution Stereo Camera (HRSC) is imaging the entire planet in full colour, 3D and with a resolution of about 10 metres. HRSC produces all those fantastic images of craters and river valleys.

ASPERA Energetic Neutral Atoms Analyser ASPERA is measuring ions, electrons and energetic neutral atoms in the outer atmosphere to reveal the numbers of oxygen and hydrogen atoms (the constituents of water) interacting with the solar wind and the regions of such interaction.

SPICAM Ultraviolet and Infrared Atmospheric Spectrometer is determining the composition of the atmosphere from the wavelengths of light absorbed by the constituent gases. An ultraviolet (UV) sensor will measure ozone and an infrared (IR) sensor measures water vapour.

participants	Prof. Dr Jean-Pierre Bibring Institut d'Astrophysique Spatiale Orsay Campus, 91405, France bibring@ias.u-psud.fr	Prof. Dr Gerhard Neukum Freie Universität Berlin Germany gneukum@zedat.fu-berlin.de
Dr Agustin Chicarro Space Science Dept. ESA/ESTEC Postbus 299 2200 AG Noordwijk Netherlands agustin.chicarro@esa.int	Prof. Rickard Lundin Swedish Institute of Space Physics Kiruna, Sweden rickard.lundin@irf.se	Prof. Jean-Loup Bertaux Service d'Aéronomie du CNRS/IPSL, BP.3 91371, Verrières-le-Buisson, France bertaux@aerov.jussieu.fr

Related Session:

PS1.2 Latest results from Mars, Tuesday, 26 April 2005.

Wednesday 27 April 2005, 16-17

Extreme Climate Events

“Heat waves” during the winter in the Swiss Alps are becoming increasingly common. Model simulation studies suggest that these warm spells may become more usual than ever.

Investigations conducted for several Swiss mountain climatological sites show that positive temperature anomalies during the winter season currently exceed those of all other seasons. These “heat waves” exhibit daily maximum temperature anomalies sometimes in excess of 16 ºC, and are observed to have increased substantially since the late 1960s.

These events are related to the North Atlantic Oscillation (NAO) that exerts significant controls on snow cover and surface-atmosphere temperature feedbacks in the alpine region. A glimpse to the future is provided for the period 2071-2100, based on regional climate model simulations which suggest that warm winter spells may increase by 30%.

The impacts of such events, particularly in terms of snow and water availability and the mountain economies that depend on these resources, need to be incorporated into future strategic resource and economic planning in the Alps.

participant

Prof. Martin Beniston, Head
Department of Geosciences
University of Fribourg
Chemin du Musee 4
CH-1700 Fribourg, Switzerland
martin.beniston@unifr.ch

Related Session:

CL12 Extreme Climate Events: Observations, Modeling, and Impacts, Wednesday, 27 April 2005, 08:30-15:00.