

Human Physiology Workshop

9th of December 2017

Venue: DLR
:envihab
Forum
51147 Cologne
Germany
Planitzweg



Human Physiology Workshop

We are pleased to welcome you to the 2nd German Human Physiology Workshop 2017. The workshop shall provide a forum for researchers at all stages (student to professor) to meet and discuss their latest findings in human physiological research and space research and give room for mutual exchange and benefit between space and non-space scientists.

Organizers

Jörn Rittweger, Tine Becker, Friederike Wütscher (German Aerospace Center (DLR), Institute of Aerospace Medicine, Cologne)

Katrin Stang, Michaela Girgenrath, Christian Rogon (German Aerospace Center (DLR), Space Administration, Microgravity Research and Life Sciences, Bonn)

Administrative secretariat

humanphysiologie-ws@dlr.de

Scientific Committee

Jörn Rittweger	German Aerospace Center (DLR), Institute of Aerospace Medicine, Space Physiology, Cologne, Germany
Markus Braun	German Aerospace Center (DLR), Space Administration, Microgravity Research and Life Sciences, Bonn, Germany
Alexander Choukèr	University of Munich, Klinikum Großhadern, Department of Anaesthesiology, Munich, Germany
Joachim Fandrey	University of Duisburg-Essen, Institute of Physiology, Germany
Nandu Goswami	Medical University of Graz, Institute of Physiology, Gravitational Physiology and Medicine, Graz, Austria
David Green	CHAPS, King's College London, UK
Markus Gruber	University of Constance, Germany
Hanns-Chr. Gunga	Center for Space Medicine and Extreme Environments, Institute of Physiology, Charité Medical University, Berlin, Germany
Andy Jones	Sport and Health Sciences, NIHR Exeter Clinical Research Facility, University of Exeter, Exeter, UK
Jens Jordan	German Aerospace Center (DLR), Institute of Aerospace Medicine, Cologne, Germany
Benjamin Levine	Texas Health Resources and the University of Texas Southwestern, Institute for Exercise and Environmental Medicine, Dallas, TX, USA
Stefan Schneider	German Sport University, Institute of Movement and Neurosciences, Cologne, Germany
Alexander Stahn	Perelman School of Medicine, Department of Psychiatry, University of Pennsylvania, USA

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Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)

Program

Saturday, December 9, 2017

07:45 **Registration**

08:15 **Welcome (DLR)**

Session 1:

Chair: Jens Jordan & David Green

08:30 **Klein, T.:** Isolation, Sleep and Brain Cortical Activity – an investigation in the Human Exploration Research Analog (HERA)

08:45 **Reichmuth, J.:** Vasopressin, Copeptin and Aquaporin Changes in Young healthy volunteers undergoing orthostatic challenge

09:00 **Javelle, F.:** Neurophysiologic, psychological and cognitive effects of 30 days of isolation including daily physical exercise

09:15 **Attias, J.:** Investigation of additional low-level axial load on neuromuscular responses during running in simulated lunar gravity

09:30 **Brix, B.:** Assessing Lymphatic Flow Changes in Patients with Lymphatic Disease: Effects of Physical Therapy

09:45 **Koschate, J.:** Hemodynamic regulation during (simulated) gravity changes – Consideration of transient differences between left and right ventricular cardiac output

10:00 **Hew, Y.:** Development of a Reliable Device for Peripheral Edema Quantification via Ultrasound Imaging in High Altitude Field Studies

10:15–10:45 Coffee break

Session 2:

Chair: Anja Niehoff & Alexander Choukèr

10:45 **Bury, N.:** Spatial orientation of motor performance on Earth and in weightlessness

11:00 **Flück, M.:** Integrated evaluation of clinical muscle plasticity after reconstruction and rehabilitation of the anterior cruciate ligament

11:15 **Thöne, A.:** Efficacy of electrical baroreflex stimulation is not impaired by moderate peripheral chemoreflex activation in patients with resistant hypertension

11:30 **Bolte, V.:** Effect of resistive vibration exercise and nutritional supplementation on morphological changes of thigh muscles during 21 days of head-down tilt bed rest

11:45 **Mendt, S.:** Circadian Core Body Temperature Rhythm in a Mars 520-day mission simulation (Mars500)

- 12:00 **Grassi, M.:** Age-related walking speed changes after 60 days of bed rest
- 12:15 **Ganse, B.:** Javelin throw in master athletes 70 years and older – a biomechanical video analysis of throwing techniques
- 12:30 **Zemann, M.:** Effects of short-term sleep restriction or fragmentation on the autonomic nervous system - Autonomous nervous system in sleep (ANSIS)

12:45–13:30 Lunch break

Session 3:

Chair: Jens Tank & Joachim Fandrey

- 13:30 **Manuel, J.:** In-vivo measurement of brainstem and hypothalamic centers involved in blood pressure regulation in humans: A high-resolution fMRI study with LBNP
- 13:45 **Trozig, I.:** Time course of Hemodynamic Parameters During Postural Changes in Stroke
- 14:00 **Boschert, A.:** Head down tilt and cognition – Effects of simulated microgravity on sleep quality and cognitive performance
- 14:15 **Diegeler, S.:** Finding NEMO – radiation induced bystander effects elicit NF- κ B-dependent survival
- 14:30 **Trautmann, G.:** Enhanced Homer cell signal in skeletal muscle soleus (SOL) of mice with a vestibular disorder, the head tilt (het-/-) mouse model
- 14:45 **Faihs, V.:** Influence of acute normobaric and hypobaric hypoxia on hemodynamics, cognitive function, cerebral near-infrared spectroscopy and gene expression

15:00–15:30 Coffee break

Session 4:

Chair: Ruth Hemmersbach & Stefan Schneider

- 15:30 **Habigt, M.:** Unnoticed Intrinsic Autoregulation Mechanisms of the Heart
- 15:45 **Carvil, P.:** The effect of 4-hour partial axial reloading via the Mk VI SkinSuit upon recumbent lumbar geometry and kinematics after 8-hour hyper-buoyancy flotation
- 16:00 **Aebi, M.:** Cerebral oxygen delivery and autoregulation with different hypobaric and normobaric hypoxic conditions in military pilot trainees

16:15–17:00 :envihab tour & awards

17:00 Adjourn

Travel Instructions (see also: <http://www.dlr.de/envihab/en/desktopdefault.aspx/tabid-9657/>)

DLR Cologne, Planitzweg, 51147 Cologne, Tel.: +49 2203 601-0

The DLR Cologne site is located south-east of Cologne, close to Cologne-Bonn airport.

How to reach us:

Arrival by train

The local trains ("S-Bahn") S 12 or S 13 leave from Koeln Hauptbahnhof (Hbf), Siegburg and Troisdorf. The local train S 13 also leaves from Koeln Bonn Airport. Daytime departures take place every 20 min for both trains so that there is a train every 10 minutes. Get off at the railway station "Porz-Wahn" and continue from there by KVB bus number 162, direction "DLR". See instructions "By bus" below.

Arrival by bus

Take the KVB bus number 162 from Porz-Wahn. The bus sign will show "DLR". Please be sure that you take the one saying "DLR" as there are different routes for bus number 162. Exit at the last stop at the main gate of the German Aerospace Center DLR Koeln.

Arrival by taxi

At Koeln Hauptbahnhof (central station) take a taxi to "Porz-Wahnheide, DLR". Taxi stands are located on both exits of the station. Taxi call for all locations in Cologne: Tel. +49/221/19410. Tell the driver to take you to "Porz-Wahnheide, DLR". The price will depend on daytime and traffic (normally it should not exceed 35 Euros).

Arrival by car

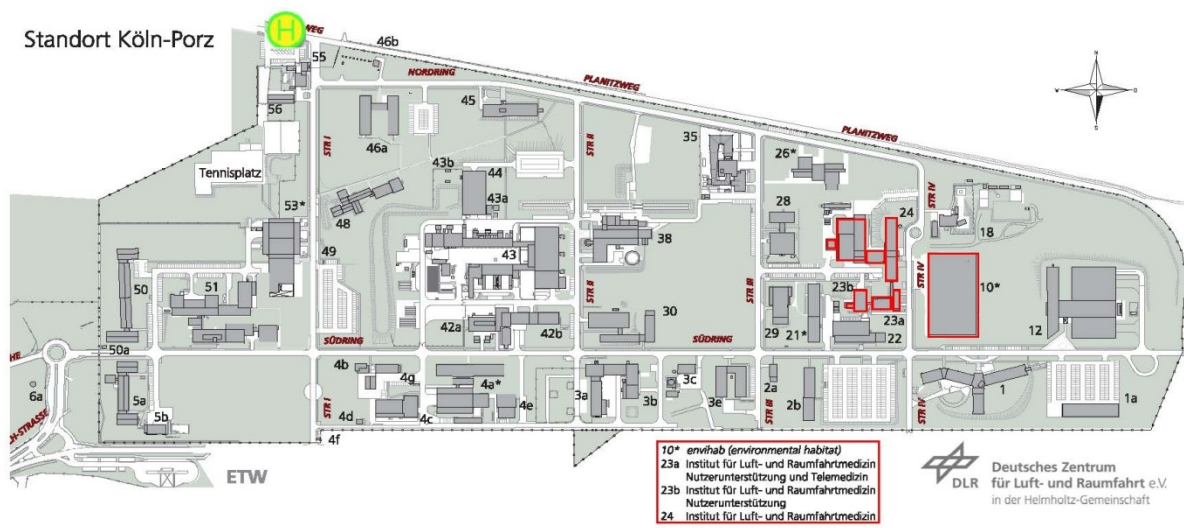
Arriving from Frankfurt (A3) or from Bonn (A59): follow the indications to Koeln Bonn Airport (A59) until the exit Porz-Wahn/Wahnheide. At the exit take the right (Porz-Wahnheide) and follow the DLR sign.

Arriving from Cologne (A59) or Oberhausen/Duesseldorf (A3): follow the indications to Koeln/Bonn Airport (A59), then take the exit Porz-Wahn/Wahnheide. At the exit drive left (Porz-Wahnheide) and follow the DLR sign.

Note: If you use a navigation system, enter your destination as "Planitzweg" instead of Linder Höhe.

Arrival by air

From Koeln Bonn Airport : Either take a taxi in front of the terminal to "DLR in Porz-Wahnheide". Or take the local train S 13 direction "Troisdorf" from the railway station "Koeln/Bonn Flughafen" (in the basement of the airport) to the station "Porz-Wahn" which is your first stop after boarding the train. Continue from there by KVB bus number 162, direction "DLR". See also above instructions "By train" and "By bus".



Accommodation (example):

Jaumanns Hotel zur Quelle Heidestraße 246 51147 Köln - Wahnheide Telefon: +49 (0) 22 03 96 47-0 Telefax: +49 (0) 22 03 96 47-317 E-Mail: info@hotelzurquelle.de Internet: www.hotelzurquelle.de	ART Hotel Köln Heidestr. 225 51147 Köln - Wahnheide Telefon: +49 (0) 22 03 - 96 64 10 Telefax +49 (02203) 96 64 19 E-Mail: info@arthotel-koeln.de Internet: www.arthotel-koeln.de
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If you have any questions please contact:

Organizers

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