

# SCIENTIFIC PROGRAMME

Tuesday June 29, 2010 - MORNING

09:00-09:30 **Workshop opening and welcome address**

*Martin Visbeck, Speaker Excellence Cluster "Future Ocean"*

09:30-10:30 **Invited lecture**

I-01 Laser ablation – ICPMS as a multifaceted tool in real-life applications

*Frank Vanhaecke, Martín Resano*

10:30-11:00 *Coffee Break*

Session 01: **Fundamentals of particle formation and transport**

*Chair: Roland Hergenröder*

11:00-11:15 1-02 'Deep' drilling of geological samples: effects of laser crater taper and aspect ratio on elemental fractionation during LA ICP-MS analyses

*Jan Košler, Wolfgang Müller, C. H. Cheng, David S. Holbrook, Sergey Broude*

11:15-11:30 1-03 Electrothermal heating of laser generated aerosols: the way to online separation of elements and interferences for LA-ICPMS

*Robert Brogioli, Bodo Hattendorf, Joachim Koch, Helmar Wiltsche, Luca Flamigni, Detlef Günther*

11:30-11:45 1-04 Transmission electron microscopy study of sample damage and particles produced by infrared femtosecond laser ablation.

*François-Xavier d'Abzac, Anne-Magali Seydoux-Guillaume, Jerôme Chmeleff, Lucien Datas and Franck Poitrasson*

11:45-12:00 Discussion

12:00-13:30 *Lunch Break*

## Tuesday June 29, 2010 - AFTERNOON

### Session O2: **Calibration, standardization, reference materials**

*Chair:* Bodo Hattendorf

- 13:30-13:45 2-05 A new method of PGE and Au reference material preparation by hydrothermal synthesis  
*Anastassia Y. Borisova, Andrew Y. Bychkov, Carole Boucayrand*
- 13:45-14:00 2-06 Compound metallic standard materials for femtosecond-LA-ICP-MS  
*Takaomi D. Yokoyama, Takamasa Imai, Toshihiro Suzuki, Eiichi Takahashi, Masao Takeyama, Takafumi Hirata*
- 14:00-14:15 2-07 Evaluation of matrix effects during laser ablation MC ICP-MS analysis of boron isotopes in tourmaline  
*Jitka Míková, Jan Košler, Michael Wiedenbeck*
- 14:15-14:30 2-08 An approach for calibration of LA-ICP-MS using thin layers of agarose gel  
*Ha-Jo Stärk, Rainer Wennrich*
- 14:30-15:00 Discussion
- 15:00-15:30 *Coffee Break*
- 15:30-18:00 **Poster session, manufacturer exhibition**

## Wednesday June 30, 2010 - MORNING

### 09:00-09:30 **Invited lecture**

I-09 50 years after Ruby - present status of solid-state lasers  
Günter Huber, Institut für Laser-Physik, Universität Hamburg

### Session O3: **Femtosecond laser ablation**

*Chair: Detlef Günther*

09:30-09:45 3-010 Structure and elemental composition of nanosecond and femtosecond laser-generated aerosols

*Reto Glaus, Ralf Kaegi, Frank Krumeich, Detlef Günther*

09:45-10:00 3-011 Fractionation effects on volatile elements (e.g. Zn and Cd) during nanosecond and femtosecond laser ablation ICP-MS analysis of glass samples

*Jorge Pisonero, Helmut Lindner, Detlef Günther*

10:00-10:15 3-012 Direct analysis of trace element in crude oils by high repetition rate femtosecond laser ablation coupled to ICP-MS detection

*Christophe Pécheyran, Estelle Ricard, Georgia Sanabria Ortega, Alain Prinzhofer, Olivier F.X. Donard*

10:15-10:30 Discussion

10:30-11:00 *Coffee Break*

### Session O4: **Instrumentation**

*Chair: Wolfgang Müller*

11:00-11:15 4-013 Laser ablation in fluid – LAIF

*David Douglas, Helen Reid, Barry Sharp*

11:15-11:30 4-014 Evaluation of laser ablation in liquids as new sampling method for ICP-MS

*Satoki Okabayashi, Takaomi D. Yokoyama, Shinji Yamamoto, Tetsuya Yokoyama, Takefumi Hirata*

11:30-11:45 4-015 A miniature laser-ablation TOF MS for chemical analysis of planetary surfaces

*Marek Tulej, Maria Iakovleva and Peter Wurz*

11:45-12:00 Discussion

12:00-13:30 *Lunch Break*

## Wednesday June 30, 2010 - AFTERNOON

### Session O5: **Applications in geochemistry**

*Chair:* Frank Vanhaecke

- 13:30-13:45 5-016 Coltan fingerprint – the mineral liberation analysis/LA-ICP-MS approach  
*Hans-Eike Gäbler, Frank Melcher, Torsten Graupner, Andreas Bahr, Maria A. Sitnikova, Friedhelm Henjes-Kunst, Thomas Oberthür, Helene Brätz, Axel Gerdes*
- 13:45-14:00 5-017 LA-MC-ICP-MS U/Th geochronology and LA-ICP-MS element pattern of cold seep carbonates: A promising combination for the reconstruction of marine methane emanation  
*Volker Liebetrau, Jan Fietzke, Detlef Günther, Anton Eisenhauer, Kathrin Hametner*
- 14:00-14:15 5-018 UV-cryo-cell-LA-ICPMS analysis of Greenland ice cores  
*Wolfgang Müller, Michael Shelley, Sune Rasmussen, Anders Svensson, Michael Kriews*
- 14:15-14:30 Discussion
- 14:30-15:00 *Coffee Break*

### Session O6: **Imaging, applications in life science**

*Chair:* Norbert Jakubowski

- 15:00-15:15 6-019 Imaging of wood anatomy, making use of a laser ablation cell designed for large samples  
*Julia Wienold, Sebastian Recknagel, Nicole Rettschlag, Manfred Forstreuter, Norbert Jakubowski*
- 15:15-15:30 6-020 Mapping of multilayered specimens using double pulse laser induced breakdown spectroscopy  
*Gines Nicolas, Victor Piñon, Maripaz Mateo*
- 15:30-15:45 6-021 Quantitative micro-imaging of trace Cs concentration in Opalinus Clay  
*Hao Wang, Daniel Grolimund, Detlef Günther, Luc van Loon, Kurt Barmettler, Beat Aeschlimann*
- 15:45-16:00 Discussion
- 16:00-18:00 **Poster Session, Manufacturer Exhibition**
- 19:00-22:30 *Workshop dinner on-board MS "Freya"*

## Thursday July 1, 2010 - MORNING

### Session 07: **Forensics, materials science, and nuclear research**

*Chair:* Dieter Garbe-Schönberg

- 09:00-09:15 7-022 Femtosecond laser ablation ICP-MS in steel industry – future or failure?  
*Helmar Wiltsche, Detlef Günther*
- 09:15-09:30 7-023 LA-ICPMS and EPMA for steel characterization – boron distribution and isotope ratios  
*Christoph Kurta, Florian Mittermayr, Karl Prattes, Walter Goessler*
- 09:30-09:45 7-024 Investigation of Xe isotope ratios in spent nuclear fuel by LA-MC-ICP-MS  
*Niko Kivel, Stephane Portier, Renato Restani, Ines Günther-Leopold*
- 09:45-10:00 7-025 New developments in forensic glass casework using laser ablation ICP-MS  
*Peter Weis, Marc Dücking, Peter Watzke, Stefan Becker*
- 10:00-10:30 Discussion
- 10:30-11:00 *Coffee Break*

### Session 08: **Applications in biogeochemistry**

*Chair:* Jan Fietzke

- 11:00-11:15 8-026 Comparison of ablation lines to improve temporal resolution for determining recent residence location of hake  
*Mei-Yu Chang, Jan Košler, Siv Hjorth Dundas, Audrey Geffen*
- 11:15-11:30 8-027 Effects of water temperature and diet on the element composition of European eel (*Anguilla anguilla*) otoliths  
*Lasse Marohn, Enno Prigge, Volker Hilge, Karsten Zumholz, Andreas Klügel, Reinhold Hanel*
- 11:30-11:45 8-028 NN  
  
*NN*
- 11:45-12:00 Discussion
- 12:00-13:00 **Closing discussion, workshop summary, and awards**
- 13:00-14:30 *Lunch Break*