

Draft Agenda
Joint Workshop on High Pressure, Planetary, and Plasma Physics
October 23 – 25, 2013
DLR, Institute of Planetary Research, Berlin, Rutherfordstraße 2
Meeting Room: Rotunde

Day 1, Wednesday October 23

12:00 Registration

12:15 Light Lunch

13:15 Opening T. Spohn/F. Sohl

Session 1

13:30 Shock physics and hypervelocity impact events (invited) Kai Wünnemann

14:00 The workings of rocky planet interiors Tilman Spohn

14:25 Warm dense matter and the interior of giant planets Ronald Redmer

14:50 New perspectives for matter under extreme states
research: the high energy density instrument at the
European XFEL Thomas Tschentscher

15:15 Discussion

15:30 Coffee

Session 2

16:00 Plate tectonics and mantle convection in super-Earths
(invited) Paul Tackley

16:30 The phase diagram of MgO Daniel Cebulla

16:50 Elastic and inelastic properties under simulated Earth's
mantle conditions in large volume apparatus in conjunction
with synchrotron radiation Hans J. Müller

17:10 Finite strain elasticity and planetary impacts Detlef de Niem

17:30 End of Session

17:30 Poster Reception (Technisches Kabinett)

Monte Carlo simulations of ionization potential depression in dense plasmas	Michal Stransky
H-He demixing and evolution of Saturn	Robert Püstow
High-pressure phase diagram of carbon	Manuel Schöttler
Thomson scattering for warm dense matter	Kai-Uwe Plagemann
Key characteristics of the iron snow regime in planetary cores	Tina Rückriemen
Determinability of the Love number k_2 of exoplanets from transit timing variations	Szilard Csizmadia
Constraints against a porous CI chondritic Ceres	Wladimir Neumann
TBD	Hanns-Peter Liermann
TBD	Manuela Borchert
TBD	Ana-Catalina Plesa
TBD	Nitin Kumar Jaiswal

19:00 End of Session

Day 2, Thursday October 24

Session 3

- 09:00** Influence of variable thermodynamic parameters on mantle dynamics (invited) Nicola Tosi
- 09:30** Mantle rheology, internal dynamics and tidal heating of massive rocky exoplanets Frank Wagner
- 09:50** High values of thermal conductivity for Fe in planetary cores: the puzzle pieces and what they mean for planetary dynamos Gerd Steinle-Neumann
- 10:10** Implications of silicon in Mercury's core on geodesy measurements Attilio Rivoldini

10:30 Coffee

Session 4

- 11:00** Thomson scattering at FEL's and planetary interiors (invited) Gianluca Gregori
- 11:30** Single pulse laser heating in double-stage diamond anvil cell: Probing material under planetary interior conditions Zuzana Konopkova
- 11:50** Investigation of phase transitions of iron under extreme dynamic compression with XANES measurements at LCLS Marion Harmand
- 12:10** Planetary physics at the future FAIR facility, Laplace Naeem Tahir

12:30 Lunch Break

Session 5

- 14:00** The outer planets in the Solar system (invited) Ravit Helled
- 14:30** Magnetic field generation and interior dynamics of Jupiter and Saturn Johannes Wicht
- 14:50** Water-ammonia mixtures at high pressures Mandy Bethkenhagen
- 15:10** Investigating phase transition kinetics of planetary bodies using the dynamic diamond anvil cell at the European XFEL Emma McBride

15:30 Coffee

Session 6

- 16:00** Ab initio simulations and interior of rocky planets (invited) Stephane Mazevet

- 16:30** Equation of state measurements of CH plastic at Gbar pressures using the National Ignition Facility Tilo Döppner
- 16:55** High-pressure research at the high-energy density instrument at the European XFEL Karen Appel
- 17:15** Opportunities for laboratory astro- and planetary physics at the matter-in-extreme-conditions end station at LCLS Bob Nagler
- 17:40** Announcements
- 17:45** **End of Session**

19:30 Workshop Dinner, Restaurant “Lehmofen”, Berlin-Köpenick

Day 3, Friday October 25

Session 7

- 09:00** Minerals and melts at extreme conditions: Insights from molecular simulations (invited) Sandro Jahn
- 09:30** Crystallization of a deep magma ocean and its consequence for planetary thermal evolution Doris Breuer
- 09:50** Ice and salt crystallization in supercooled aqueous solutions: Requirements concerning thermophysical parameters Olaf Hellmuth
- 10:10** Subsurface water oceans on icy Solar system bodies Frank Sohl
- 10:30** **Coffee**

Session 8

- 11:00** Exploring atmospheres of hot mini-Neptunes and extrasolar giant planets orbiting different stars (invited) Yamila Miguel
- 11:30** Modeling brown dwarfs using ab initio equation of state data Andreas Becker
- 11:50** Planetary climate and the link to planetary interiors Philip von Paris
- 12:10** Observational constraints on the critical core mass from the rocky exoplanet population Heike Rauer
- 12:30** **Closeout and Adjourn**
- 12:30** **Light Lunch**