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 Wün nemann
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 k2 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