

## Program overview - Monday, 2<sup>nd</sup> September

Session	Chair	Time	Room	Speakers
Opening Ceremony		8:45 - 9:00	Prague	
Mo-PL 1	Karen Appel	9:00 - 10:00	Prague	<b>Mohamed Mezouar</b>
Coffee Break		10:00 - 10:30	Berlin + Amsterdam	
Mo-EM1	Andrew Huxley	10:30 - 12:15	Prague - West	<b>Ivan Yahnuk</b> Jinlong Zhu Mingtao Li Utpal Dutta Ayako Ohmura Ingo Loa
Mo-Geo1	Simon Redfern	10:30 - 12:15	Prague - East	<b>Xialoei Feng</b> Alexandre Courac Tetsuya Komabayashi Marija Krstulovic Clemens Prescher Eugenio Calandrini
Mo-LS1x	Craig Bull	10:30 - 12:15	Zürich	<b>Gaston Garbarino</b> Gunnar Weck Catalin Popescu Karen Appel Jennifer Sears Joseph Boby
Lunch Break		12:15 - 13:45	Vienna	
Mo-Ins1	Gunnar Weck	13:45 - 15:15	Prague - West	<b>Reinhard Boehler</b> Charlie McMonagle Malcolm Guthrie Nikolay Chigarev Duanwei He
Mo-Geo2	John Loveday	13:45 - 15:15	Prague - East	<b>Livia E. Bove</b> Demetrio Scelta Ciprian Pruteanu Katherine Brown Ryo Yamane
Mo-Bio	Nick Brooks	13:45 - 15:15	Zürich	<b>Phillipe Oger</b> Judith Peters Ivo B. Rietveld László Smeller Anais Cario
Coffee Break		15:15 - 15:45	Berlin + Amsterdam	
Mo-LS2n	Malcolm Guthrie	15:45 - 17:00	Prague - West	<b>Noriki Terada</b> Dmitry Sokolov Pau Jorba Reinhard Boehler <b>Kazuki Komatsu</b>

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Mo-Geo3	Livia E. Bove	15:45 - 17:00	Prague - East	Samuele Fanetti Dane Sterbenz Sooheyong Lee
Mo-Food	Jorge Saraiva	15:45 - 17:00	Zürich	<b>Kateřina Štulíková</b> Concepción P. Lamela Izabela Porębska Milan Houška
Poster Session 1		17:00 - 18:45	Berlin	

8:45 - 9:00 **Opening Ceremony**

Room Prague

9:00 - 10:00 **Plenary Lecture 1**

Room Prague

Chair Karen Appel (DESY, Hamburg, Germany)

Speaker **Mohamed Mezouar** (ESRF, Grenoble, France)

**Liquid-liquid transitions in molecular liquids: the cases of sulfur and phosphorus**

10:00 - 10:30 **Coffee Break**

Room Berlin + Amsterdam

10:30 - 12:15 **Electronic Magnetic and Transport Properties 1 – Topological effects in compressed solids**

Room Prague - West

Chair Andrew Huxley (University of Edinburgh, UK)

10:30 - 11:00 **Pressure effect on the topological phase transitions in HgTe quantum wells**

**Ivan Yahniuk** (Institute of High Pressure Physics, PAS, Warsaw, Poland), S. S. Krishtopenko, G. Grabecki, A. Kazakov, G. Cywiński, M. Majewicz, V. I. Gavrilenko S. A. Dvoretzky, N. N. Mikhailov, J. Wróbel, F. Teppe, J. Przybytek, T. Dietl, W. Knap

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- 11:00 - 11:15      **Superconductivity Emerging from a Weyl Semimetal Candidate  $\text{NbIrTe}_4$  under Pressure**  
**Jinlong Zhu** (HPSTAR, Shanghai, China), Meiling Jin, Peng Yu, Changzeng Fan, Gang Xu, Zheng Liu
- 11:15 - 11:30      **Pressure-induced Lifshitz Transitions and superconductivity in doped topological insulator  $\text{Nb}_x\text{Bi}_2\text{Se}_3$**   
**Mingtao Li** (HPSTAR, Shanghai, China), Lin Wang
- 11:30 - 11:45      **High pressure magneto-resistance measurements on Weyl semimetals NbP and NbAs**  
**Utpal Dutta** (HP&SRPD, Bhabha Atomic Research Centre, Mumbai, India), Subodha Sahoo, S. Karmakar.
- 11:45 - 12:00      **Effect of pressure on the superconducting transition in the Dirac semimetal  $\text{PdTe}_2$**   
**Ayako Ohmura** (Faculty of Science, Niigata University, Japan), Huaqian Leng, Luong Ngoc Anh, Fumihiko Ishikawa, Takashi Naka, Yingkai Huang, Anne de Visser
- 12:00 - 12:15      **The Layered Structures of Bi-Te Compounds Under Pressure**  
**Ingo Loa** (The University of Edinburgh, UK), Kenneth Freeman, Ruth A. Downie, Jan-Willem G. Bos
- 10:30 - 12:15      **Geosciences 1 - Silicates**  
Room                      Prague - East  
Chair                        Simon Redfern (University of Cambridge, UK)
- 10:30 - 11:00      **Nitrogen cycle in deep Earth: insights from first-principles calculations**  
**Xialoei Feng** (HPSTAR, Beijing, China)
- 11:00 - 11:15      **Mechanisms of silicon and carbon allotropes' crystallization in condensed media by in situ diffraction of synchrotron radiation**  
**Alexandre Courac** (IMPMC Sorbonne université, Paris, France), A. Courac, S. Pandolfi, Y. Le Godec, W.A. Crichton

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- 11:15 - 11:30      **Phase relations of silicon-bearing Earth's core**  
**Tetsuya Komabayashi** (University of Edinburgh, UK),
- 11:30 - 11:45      **Structural changes in complex silicate glasses at high pressure and temperature conditions probed by X-ray absorption spectroscopy**  
**Marija Krstulovic** (ESRF, Grenoble, France), Angelika D. Rosa, Nicole Biedermann, Margarita Merkulova, Tetsuo Irifune, Max Wilke
- 11:45 - 12:00      **Structural changes in Mg-silicate glasses up to above 1 Mbar**  
**Clemens Prescher** (DESY, Hamburg, Germany), V.B. Prakapenka, J. Stefanski, E. Greenberg, S. Petitgirard
- 12:00 - 12:15      **Dynamical lattice properties of MgSiO<sub>3</sub> perovskite at high pressure**  
**Eugenio Calandrini** (IMPMC-Sorbonne Universités, Paris, France), B. Wehinger, P. Giura, A. Bosak, D. Antonangeli, A. Mirone, S. L. Chaplot, R. Mittal, E. Ohtani, A. Shatskiy, S. Saxena, S. Ghose, M. Krisch, S. Nazzareni
- 10:30 - 12:15      **High Pressure Instrumentation at Large Scale Facilities 1 - synchrotrons, x-rays**  
Room                      Zürich  
Chair                        Craig Bull (ISIS, UK)
- 10:30 - 11:00      **High Pressure Science and Recent Development at the ESRF in view of the EBS Programme**  
**Gaston Garbarino** (ESRF, Grenoble, France)
- 11:00 - 11:15      **Melting curve and structure of hot dense Gold probed by X-ray diffraction**  
**Gunnar Weck** (CEA-DAM, Arpajon, France), F. Datchi, G. Garbarino S. Ninet, J. A. Queyroux, P. Loubeyre, M. Mezouar
- 11:15 - 11:30      **High Pressure-High Temperature studies at the MSPD beamline of Alba synchrotron**

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**Catalin Popescu** (CELLS – Alba Synchrotron Light Source, Barcelona, Spain.), F. Fauth

11:30 - 11:45 [The High-Energy Density instrument at European XFEL: Current status and latest research applications](#)

**Karen Appel** (European XFEL, Hamburg, Germany), E. Brambrink, V. Cerantola, S. Göde, Z. Konôpková, M. Makita, M. Nakatsutsumi, Th. Preston, M. Schoelmerich, A. Schmidt, J.-P. Schwinkendorf, K. Sukharnikov, I. Thorpe, L. Wollenweber, C. Baetz, Th. Cowan, H. Höppner, A. Pelka, T. Toncian, Th. Tschentscher, U. Zastra

11:45 - 12:00 [High Pressure Resonant X-ray Diffraction Set up at Beamline P09](#)

**Jennifer Sears** (DESY, Hamburg, Germany), M. Kusch, G. S. Thakur, K. Glazyrin, A. Ehnes, J. Geck, M. Jansen, S. Francoual

12:00 - 12:15 [Xpress: a dedicated high pressure diffraction beamline at Elettra Sincrotrone Trieste](#)

**Joseph Boby** (ELETTRA, Trieste, Italy)

12:15 - 13:45 **Lunch Break**

Room Vienna

13:45 - 15:15 **Instrumentation, New Techniques 1**

Room Prague - West

Chair Gunnar Weck (CEA-DAM, Arpajon, France)

13:45 - 14:15 [Diamond anvils: Which grade? Which size? Which shape? Which seat?](#)

**Reinhard Boehler** (ORNL, USA),

14:15 - 14:30 [Reducing the background of ultra-low temperature X-ray diffraction data through new methods and advanced materials](#)

**Charlie McMonagle** (Newcastle University, UK), Michael Richard Probert

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- 14:30 - 14:45      Preferred orientation in diamond anvil cells: a new approach using time-of-flight neutron diffraction  
**Malcolm Guthrie** (ESS, Lund, Sweden), Bianca Haberl, Jamie Molaison, Antonio dos Santos, John Loveday, Reini Boehler
- 14:45 - 15:00      Three-dimensional imaging of inhomogeneities in transparent solids compressed in a DAC by time-domain Brillouin scattering  
**Nikolay Chigarev** (Laboratory of acoustics of Le Mans University, France), Elton De Lima Savi, Samuel Raetz, Vincent Tournat, Alain Bulou, Andreas Zerr, Vitaliy E. Gusev
- 15:00 - 15:15      Experimental study on the pressure-generation efficiency and pressure-seal mechanism for large volume cubic press  
**Duanwei He** (Inst. of Atomic and Molecular Phys., Sichuan University, China), Duanwei He.
- 13:45 - 15:15      **Geosciences 2 - high pressure ices, water mixtures**  
Room                      Prague - East  
Chair                        John Loveday (University of Edinburgh, UK)
- 13:45 - 14:15      Exploring new phenomena in ice clathrates and filled ices under planetary conditions  
**Livia E. Bove** (EPFC, Laussane, Switzerland),
- 14:15 - 14:30      High pressure reactivity of astrochemical model ices  
**Demetrio Scelta** (ICCOM-CNR/LENS, Florence, Italy), M. Ceppatelli, M. Peruzzini, R. Bini
- 14:30 - 14:45      Why methane and water mix under pressure : the complete story  
**Ciprian Pruteanu** (University College London, UK), V.N. Robinson, C.L. Bull, D. Marenduzzo, A. Hassanali, S. Scandolo, J.S. Loveday
- 14:45 - 15:00      The Hidden Tetragonal Phase of Ammonium Fluoride  
**Katherine Brown** (University of Edinburgh, UK), Z. Sharif, C.G. Salzmann, C.L. Bull, J.S. Loveday

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- 15:00 - 15:15      **Dielectric observation of disordered-states transformation of ice VII at around 10 GPa**  
**Ryo Yamane** (Geochemical Research Center, The University of Tokyo, Japan), Kazuki Komatsu, Hiroyuki Kagi
- 13:45 - 15:15      **Bio-/Life- Sciences**  
Room                Zürich  
Chair                Nick Brooks (Imperial College London, UK)
- 13:45 - 14:15      **High-hydrostatic pressure adaptation resolved by combined physiological and biophysical approaches in piezophilic archaea**  
**Phillipe Oger** (INSA, Lyon)
- 14:15 - 14:30      **Pressure effects on the protein dynamical transition**  
**Judith Peters** (Universite Grenoble Alpes, France), Fabio Librizzi, Rita Carrotta, Antonio Cupane
- 14:30 - 14:45      **Deducing high-pressure behavior for chemically fragile systems: the polymorphism of spironolactone**  
**Ivo B. Rietveld** (University of Rouen, France), Maria Barrio, Pol Lloveras, René Céolin, Josep-Lluís Tamarit
- 14:45 - 15:00      **High pressure studies on G-quadruplex DNA structures**  
**László Smeller** (Sемmelweis University, Budapest, Hungary), Mónika Adányi, Frederik Pfalzgraf, András Végh, Róbert Gál, Judit Somkuti
- 15:00 - 15:15      **Introducing high pressure microfluidic tools to study the deep biosphere**  
**Anais Cario** (CNRS Bordeaux, France), Olivier Nguyen, Carole Lecoutre, Yves Garrabos, Samuel Marre
- 15:15 - 15:45      **Coffee Break**  
Room                Berlin + Amsterdam

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- 15:45 - 17:00      **High Pressure Instrumentation at Large Scale Facilities 2 - neutrons**  
Room                Prague - West  
Chair                Malcolm Guthrie (ESS, Lund, Sweden)
- 15:45 - 16:15      **Spherical Neutron Polarimetry under High Pressure for Multi-ferroics**  
**Noriki Terada** (NIMS, Tsukuba, Japan), Navid Qureshi, Laurent C. Chapon, Toyotaka Osakabe
- 16:15 - 16:30      **Effect of uniaxial pressure on magnetic structure of a frustrated triangular antiferromagnet.**  
**Dmitry Sokolov** (Max Planck Institute, Dresden, Germany), S. Khim, D. D.Khalyavin, P.Manuel, A. S. Gibbs, A. P. Mackenzie, , C. W. Hicks
- 16:30 - 16:45      **Focused Neutron Depolarization a new probe for High Pressure Magnetic Phases**  
**Pau Jorba** (Technical University of Munich, Germany), Marc Seifert, Michael Schulz, Vladimir Tsurkan, Alois Loidl, Christian Pfeleiderer
- 16:45 - 17:00      **High pressure neutron scattering at Oak Ridge National Laboratory**  
**Reinhard Boehler** (ORNL, USA), Jamie J. Molaison, Reinhard Boehler
- 15:45 - 17:00      **Geosciences 3 - high pressure ices, water mixtures**  
Room                Prague - East  
Chair                Livia E. Bove (EPFC, Laussane, Switzerland)
- 15:45 - 16:15      **Preparation of ice Ic without stacking-disorder by emptying hydrogen hydrate**  
**Kazuki Komatsu** (The University of Tokyo, Japan), S. Machida, T. Hattori, A. Sano-Furukawa, R. Yamane, K. Yamashita, H. Kagi
- 16:15 - 16:30      **Homogeneous melting dynamics of bulk ice**



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- Samuele Fanetti** (Lens & ICCOM-CNR, Florence, Italy), Naomi Falsini, Paolo Bartolini, Margherita Citroni, Andrea Lapini, Andrea Taschin, Roberto Bini
- 16:30 - 16:45      **Ice nucleation far from equilibrium**  
**Dane Sterbentz** (University of California, Davis, USA), P.C. Myint, A.A. Chernov, B. Sadigh, L.X. Benedict, B.M. Hall, S. Hamel, J. Belof
- 16:45 - 17:00      **Atomic- and molecular-structural measurement of highly supercompressed liquid water at room temperature by using dynamic diamond anvil cell**  
**Sooheyoung Lee** (Korea Research Institute of Standards and Science), Yun-Hee Lee, Yong-Jae Kim, Yongchan Cho, Geun Woo Lee
- 15:45 - 17:00      **Food Sciences and Technology**  
Room                      Zürich  
Chair                      Jorge Saraiva (University of Aveiro, Portugal)
- 15:45 - 16:15      **High hydrostatic pressure treatment as a new approach to extend the shelf-life of unfiltered beer**  
**Kateřina Štulíková** (Department of Biotechnology, UCT, Prague, Czech Republic), Pavel Dostálek, Blanka Kotlíková, Tereza Tůmová, Milan Houška
- 16:15 - 16:30      **Extraction of phenolic compounds by high hydrostatic pressure from eight edible algae species from the North West coast of Spain: Process modelling and optimization**  
**Concepción P. Lamela** (University of Vigo, Spain), C. Jiménez López, A. G. Pereira, C.S.P.L. Lopes, Lillian Barros, M.A. Prieto, Isabel C.F.R. Ferreira, J. Simal-Gandara.
- 16:30 - 16:45      **The combined effect of high pressure and ultrasounds on the germination and inactivation of Alicyclobacillus acidoterrestris spores in apple juice**

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**Izabela Porębska** (Institute of High Pressure Physic of PAS, Warsaw, Poland), Barbara Sokołowska, Łukasz Woźniak, Monika Fonberg-Broczek

16:45 - 17:00 **Bovine collagen rheological properties as a function of high pressure treatment**

**Milan Houška** (Food Research Institute Prague, Czech Republic), Aleš Landfeld, Pavla Novotná, Karel Kýhos, Jan Strohalm

17:00 - 18:45 **Poster Session 1**

Room Berlin

Mo-P-01

**Pressure influence on magnetism of  $UCo_{1-x}T_xAl$  solid solutions with T = 3d- and 5d- metals**

Alexander Andreev, N.V. Mushnikov, J. Kaštil, J. Šebek, Z. Arnold

Mo-P-02

**The evolution of high-pressure phases in near half-metallic Heusler alloys**

Vasileios Tzanos, Anna Kusmartseva, Christophe Guillaume

Mo-P-03

**Hardness and damage of the U-Fe-Ge alloy sphere under explosive loading**

Dmitry Belyaev, A.S. Aleksandrov, Yu.N. Zuev, E.A. Kozlov, S.A. Lekomtsev, A.S. Nedosviti, I.L. Svyatov, E.A. Levi

Mo-P-04

**Magnetoelasticity of  $Lu_2Fe_{16.5}Ru_{0.5}$**

Evgenia Chitrova, A. V. Andreev, O. Isnard, K. Koyama, K. Watanabe

Mo-P-05

**Pressure effect on the Hall resistance of the Dirac semimetal  $PdTe_2$**

Fumihiro Ishikawa, Ayako Ohmura, Huaqian Leng, Takashi Naka, Yingkai Huang, Anne de Visser

Mo-P-06

**Magnetic Phase Diagram of  $ErB_4$  under High Pressure**

Gabriel Pristas, J. Bačkai, Mat. Orendáč, S. Gabáni, E. Gažo, N. Yu. Shitsevalova, A.

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Dukhnenko, K. Siemensmeyer, K. Flachbart

Mo-P-07

A comparison between Si substitution and pressure effects on structural and magnetic properties of tetragonal  $Mn_3Ge$

Hironari Okada, Yudai Shoji, Rie Y. Umetsu

Mo-P-08

High Pressure Magnetic Measurements of  $2H-NbSe_2$

Israel Osmond, Sven Friedemann, Owen Moulding, Takaki Muramatsu

Mo-P-09

Evolution of magnetic phase diagram of  $UlrSi_3$  upon application of pressure

Jaroslav Valenta, Fuminori Honda, Michal Vališka, Petr Opletal, Jiří Kaštil, Martin Míšek, Petr Proschek, Jiří Pospíšil, Jiří Prchal, Vladimír Sechovský

Mo-P-10

Electrical properties of Graphene Oxide (GO) at high pressure and low temperatures

Jesus Gonzalez, Fernando Rodríguez, Christophe Thessieu

Mo-P-11

Pressure evolution of magnetic properties of Fe doped  $NdCo_{12-x}Fe_xB_6$

Olivier Isnard, Jiří Kaštil, Fabiano Mesquita, Leopold V. B. Diop

Mo-P-12

Evolution of structure and local atomic environment upon pressure-induced metallization in intermetallic  $FeGa_3$

Joseph Boby, S. Bhattacharjee, B. P. Doyle, M. A. M. Ahmed, P. Musyimi, E. Carleshi, G. R. Hearne

Mo-P-13

Transport properties of fluorite  $RuO_2$

K.B. Joshi, V. Maurya

Mo-P-14

The effect of pressure on ferromagnetic properties of the van-der-Waals materials  $VI_3$  and  $CrI_3$

Vladimír Sechovský, M. Kratochvílová, J. Valenta, S. Son, P. Proschek, M. Míšek, J. Prchal, J-G.

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Park

Mo-P-15

Study Ab Initio of the Effect of A-Site Substitution on the Fe<sub>1.12</sub>Te System

Mir Ali,

Mo-P-16

Electronic transport properties of VS<sub>4</sub> under high pressures

Natalia Morozova, Igor V. Korobeinikov, Alexander N. Titov, Sergey V. Ovsyannikov

Mo-P-17

High-pressure influence on magnetic transitions of Ce<sub>2</sub>Pd<sub>2</sub>In intermetallic compound

Petr Král, Jiří Prchal, Jiří Kaštil, Milan Klicpera, Kristina Vlášková

Mo-P-18

Pressure characterization of the EuRu<sub>2</sub>P<sub>2</sub> single crystal

Petr Proschek, Jiří Prchal, Martin Diviš, Jan Zubáč, Jan Prokleška, Yoshichika Onuki, Fuminori Honda

Mo-P-19

Pressure effect on superconductivity in YB<sub>6</sub>

Slavomír Gabáni, K. Flachbart, E. Gažo, M. Orendáč, G. Pristáš, P. Samuely, T. Mori, D. Braithwaite, M. Hanfland, K. Kamenev

Mo-P-20

High Pressure Electrical Transport Evolution of Single Crystal Graphite

Yang Liuxiang, Ho-Kwang Mao

Mo-P-21

Pressure dependence of electrical conductivity in FeTiO<sub>3</sub> Ilmenite

Yuki Nakamoto, Masafumi Sakata, Takamitsu Yamanaka, Katsuya Shimizu, Ho-kwang Mao, Russell J. Hemley

Mo-P-22

Superconductivity in Pristine 2Ha-MoS<sub>2</sub> at Ultrahigh Pressure

Zhenhua Chi,

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Mo-P-23

Effects of high hydrostatic pressure treatment on the properties of different egg white-based dairy product alternatives

Karina Ilona Hidas, Adrienn Tóth, Attila Nagy, Péter Penksza, Ildikó Nyulas-Zeke, László Friedrich, Csaba Németh

Mo-P-24

Effect of *Lactobacillus brevis* cells growth phase on inactivation and sublethal injury caused by high pressure

Justyna Nasiłowska, Barbara Sokołowska, Marzena Woszczyk

Mo-P-25

Effect of HHP on microbiota and shelf-life of vitamin enriched Hungarian sausages

Adrienn Tóth, Cs. Németh, P. Penksza, A. Nagy, J. Surányi, L. Friedrich

Mo-P-26

Pascalized coconut water with coffee extract - sensory and microbial quality

Milan Houška, Jaroslav Macháček, Ivana Laknerová, Marian Urban, Eva Rutová, Jana Rysová, Jitka Pinkrová, Pavla Novotná, Ales Landfeld

Mo-P-27

Empowering the antioxidant activity and lipid recovery from *Aurantiochytrium* sp. extracts with high pressure-assisted extraction

Jorge Saraiva, Jorge A. Saraiva, Catarina Ribeiro, Carlos A. Pinto, Joaquina Pinheiro, Rui Ganhão, Marco F.L. Lemos, Narcisa M. Bandarra, Joana Coutinho, Maria C. Paulo

Mo-P-28

Structural study of hydrous sodium silicate melts under high pressure

Ken-ichi Funakoshi, T. Ohashi, T. Sakamaki

Mo-P-29

Equation of state of orthoferrosilite at pressure up to 15 GPa and high temperatures

Tatiana Sokolova, Peter Dorogokupets

Mo-P-30

Reactions between  $\text{CaCO}_3$  and bridgmanite at mantle conditions and the role of carbonates as possible trace element carriers into the Earth's deep interior

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Nicole Biedermann, Karen Appel, Lkhamsuren Bayarjargal, Chris-Julian Fruhner, Georg Spiekermann, Wolfgang Morgenroth, Anna Pakhomova, Gaston Gabarino, Richard Wirth, Max Wilke

Mo-P-31

[Melting experiments on Fe<sub>3</sub>S under high pressure](#)

Sam Thompson, Tetsuya Komabayashi, Helene Breton, Chris McGuire, Sho Suehiro, Yasuo Ohishi, Konstantin Glazyrin, Anna Pakhomova

Mo-P-32

[Experimental view on mineral inclusions of “mixed” paragenesis in lithospheric diamonds](#)

Konstantin Litasov, Anton Shatskiy

Mo-P-33

[New high-pressure minerals in iron meteorites](#)

Konstantin Litasov, Svetlana Teplyakova, Anton Shatskiy

Mo-P-34

[High pressure and high temperature stability of methane hydrate in water-methane-ammonia system](#)

Hirokazu Kadobayashi, H. Hirai, H. Ohfujii, H. Kawamura, M. Ohtake, Y. Yamamoto

Mo-P-35

[Single-crystal X-ray study of K-tourmaline crystal structure up to 20 GPa](#)

Sergey Rashchenko, A.Yu. Likhacheva, I.E. Collings, A.V. Korsakov

Mo-P-36

[Decomposition of siderite and formation of tetracarbonates at conditions of the lower mantle](#)

Christian Albers, Georg Spiekermann, Robin Sakrowski, Christian Sternemann, Lkhamsuren Bayarjargal, Metin Tolan, Max Wilke

Mo-P-37

[Melting phase relations of the system Fe-C up to 60 GPa](#)

Chris McGuire, Tetsuya Komabayashi, Helene Breton, Samuel Thompson, Geoffrey Bromiley, Sho Suehiro, Yasuo Ohishi

Mo-P-38

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Interpreting the electrical conductivity of deep earth by modelling the bulk property using constituent property at high temperature and pressure

Kui Han, Xinzhuan Guo, Simon Clark

Mo-P-39

Phase diagram of Silicon: in situ experimental data and simulations

Alexandre Courac, S. Pandolfi, Y. Le Godec

Mo-P-40

High pressure structure and chemistry of layered phases of Phosphorus

Demetrio Scelta, A. Baldassarre, K. F. Dziubek, M. Serrano-Ruiz, A. B. Cairns, G. Garbarino, V. Svytlik, M. Peruzzini, R. Bini, M. Ceppatelli

Mo-P-41

Influence of alloying elements on kinetics of the initial stage sintering of powders on the basis of yttrium stabilized zirconia

L.V. Loladze, I. K. Nosolev, A.M., Tkachenko, I.I. Brjukhanova, G.N. Golovan, T. Konstantinova

Mo-P-42

Effect of small additions of alumina on the structure and properties of ceramics based on zirconia nanopowders

Konstantinova Tetyana , D.R.Belichko, I.K.Nosolev, A.G.Myloslavskyy

Mo-P-43

Effect of cold isostatic pressure on the ceramic structure 3Y – TZP with small amount Al<sub>2</sub>O<sub>3</sub>

Konstantinova Tetyana, Igor Danilenko, Oleksander Myloslavskyy, Leonid Ahkozov, Galina Volkova, Valerii Burkhovetski, Valentina Glazunova

Mo-P-44

Products of high-pressure disulphide metathesis controlled by mass spectrometry

Szymon Sobczak, Paulina Ratajczyk, Andrzej Katrusiak

Mo-P-45

Consolidation of superhard particles at high pressures and high temperatures

Vladimir Filonenko, Igor Zibrov, Alexander Anokhin, Elena Kukueva

Mo-P-46

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### Solid-phase recrystallization of oxides in the medium of sub- and supercritical water fluid

Yurii Ivakin, M.N. Danchevskaya, A.A. Kholodkova, G.P. Muravieva

Mo-P-47

### High pressure anomalies in exfoliated MoSe<sub>2</sub>: Resonance Raman and X-ray diffraction studies

Bishnupada Ghosh, Pinku Saha, Goutam Dev Mukherjee

Mo-P-48

### Synthesis and Compression study of orthorhombic Fe<sub>7</sub>(C, Si)<sub>3</sub>: A possible constituent of the Earth's core

Pinku Saha, Bishnupada Ghosh, Konstantin Glazyrin, Goutam Dev Mukherjee

Mo-P-49

### Changing of the morphology of crystals BaTiO<sub>3</sub>, synthesized in supercritical or subcritical water fluid

Marina Danchevskaya, A.A. Kholodkova, Yu.D. Ivakin, G.P. Muravieva, V.V. Rybalchenko

Mo-P-50

### Low Dimensional Organic-Inorganic Hybrid Nanomaterial synthesized in solvothermal condition

Takayuki Nakane, T. Naka, S. Kubuki, K. Sato, N. Terada, T. Uchikoshi, A. de Visser, H. Abe

Mo-P-51

### Physical properties of pressure-prepared pellets of dead leaves

Gendo Oomi, Shohei Harada, Tomohiro Nakata, Yoshihiko Hayashi, Tetsujiro Eto

Mo-P-52

### Influence of intensive plastic deformation under pressure upon synthesis of Zr-Zn alloys from elemental powders

Arkadii Dobromyslov, N.I. Taluts

Mo-P-53

### Kinetically driven frowning of the crystal phase

Aleksandra Półrolniczak, Szymon Sobczak, Andrzej Katrusiak

Mo-P-54

### A unique multianvil 6-6 assembly for a cubic-type multianvil apparatus



## Program overview - Monday, 2<sup>nd</sup> September

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Kazuhiro Fuchizaki, Tomoyuki Wada, Hiroki Naruta, Akio Suzuki, Kazuo Irino

Mo-P-55

[High Pressure XAS at the I20-EDE beamline at Diamond Light Source](#)

Monica Amboage, Luke Keenan, Tathiana Kokumai, Shusaku Hayama, Fred Mosselmans, Sofia Diaz-Moreno

Mo-P-56

[PETRA III beamline P61B: Extreme conditions science using the LVP](#)

Robert Farla, Shrikant Bhat, Stefan Sonntag, Norimasa Nishiyama, Takayuki Ishii, Tomoo Katsura

Mo-P-57

[Shock-wave study of the metallization of alkali halides up to 500 GPa](#)

Orianna Ball, Suzanne Ali, Jon Eggert, Gilbert W. Collins, Matt Diamond, Raymond Jeanloz, R. Stewart McWilliams

Mo-P-58

[Structure of SiO<sub>2</sub> Melts at Megabar Pressures](#)

Appel Karen, M. Schoelmerich, C. Bolme, T. Duffy, E. Galtier, A. Gleason, B. Nagler, T. Preston, R. Smith, S. Tracy, T. Tschentscher, L. Wollenweber, U. Zastra

Mo-P-59

[On the Dimorphism and the Pressure-Temperature State Diagram of Gestodene, a Steroidal Progestogen Contraceptive](#)

Ivo B. Rietveld, Hassan Allouchi, René Céolin

Mo-P-60

[High pressure infrared spectroscopy studies on G quadruplexes](#)

Judit Somkuti, László Smeller

## Program overview - Tuesday, 3<sup>rd</sup> September

Session	Chair	Time	Room	Speakers
Tu - PL 2	Chris Pickard	9:00 - 10:00	Prague	<b>Anatoly Belonoshko</b>
Coffee Break		10:00 - 10:30	Berlin + Amsterdam	
Tu-PT1	Daniel Braithwaite	10:30 - 12:15	Prague - West	<b>Michael Nicklas</b> Jiří Pospíšil Jun Gouchi Owen Moulding Bar Hen
Tu-SS1	Mohamed Mezouar	10:30 - 12:15	Prague - East	<b>Mikhail Popov</b> Mario Santoro Liam Kelsall Andreas Zerr Hannah Bartlett Michael Stevenson
Tu-Chem1	Jesus Gonzalez	10:30 - 12:15	Zürich	<b>Venkata BHDRAM</b> Anastasia Kholodkova Takashi Taniguchi Hiroya Abe Georgyu Panasyuk
Tu-Th1	Ion Errea	10:30 - 12:15	Paris	<b>Chris Pickard</b> K.B. Joshi Julia Contreras-Garcia Yunsheng Jin Roman Martoňák
Lunch Break		12:15 - 13:45	Vienna	
Tu-PT2	Vladimír Sechovský	13:45 - 15:15	Prague - West	<b>William Knafo</b> Andrew Huxley Daniel Braithwaite Michal Vališka
Tu-Geo4	Tetsuya Komabayashi	13:45 - 15:15	Prague - East	<b>Andreas Hermann</b> Viktor V. Struzhkin Matteo Ceppatelli Thomas Meier Ilya Sholin
Tu-SS2	Alfonso Muñoz	13:45 - 15:15	Zürich	<b>Iain Oswald</b> Craig Bull Igor Danilov Nicholas Funnell Lewis Conway
Tu-Dyn1	Stefan Weber	13:45 - 15:15	Paris	<b>Bruce Remington</b> Geun Woo Lee Yun-Hee LEE Emma Floyd Zhuowei GU
Coffee Break		15:15 - 15:45	Berlin + Amsterdam	

## Program overview - Tuesday, 3<sup>rd</sup> September

Tu-PT3	Jeroen Custers	15:45 - 17:00	Prague - West	<b>Malte Grosche</b> Juan A. Sans Matthew J. Coak Eran Sterer
Tu-Geo5	Andreas Hermann	15:45 - 17:00	Prague - East	<b>Miriam Peña Alvarez</b> Mikhail Kuzovnikov Sandra Ninet
Tu-SS3	Gaston Garbarino	15:45 - 17:00	Zürich	<b>Bo ZOU</b> Yang Lu Zengming Zhang Da Huang
Tu-Dyn2	Reinhard Boehler	15:45 - 17:00	Paris	<b>Noemie Jourdain</b> Jaroslav Nejdil Jean-Alexis Hernandez
Women in High Pressures		17:00 - 18:45	Prague - East	

9:00 - 10:00

### Plenary Lecture 2

Room

Prague

Chair

Chris Pickard (University of Cambridge, UK)

Speaker

[Anatoly Belonoshko](#) (Royal Institute of Technology (KTH), Stockholm, Sweden)

### The Rise and Fall of Melting Temperatures

10:00 - 10:30

#### Coffee Break

Room

Berlin + Amsterdam

10:30 - 12:15

#### Pressure-induced phase transitions and quantum criticality 1 - Quantum criticality

Room

Prague - West

Chair

Daniel Braithwaite (CEA, Grenoble, France)

10:30 - 11:00

Investigation of pressure tuned quantum criticality utilizing thermodynamic probes

[Michael Nicklas](#) (Max Planck Institute, Dresden, Germany),

## Program overview - Tuesday, 3<sup>rd</sup> September

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- 11:00 - 11:15      **The effect of hydrostatic pressure 15 GPa on magnetism of UIrGe**  
**Jiří Pospíšil** (Charles University, Prague, Czech Republic), Jun Gouchi, Yoshinori Haga, Fuminori Honda, Yoshiya Uwatoko, Naoyuki Tateiwa, Shinsaku Kambe, Shoko Nagasaki, Yoshiya Homma, Etsuji Yamamoto
- 11:15 - 11:30      **Pressure-induced heavy-fermion superconductivity in non-centrosymmetric compound CeNiC<sub>2</sub>**  
**Jun Gouchi** (University of Tokyo, Japan), S. Katano, M. Ito, K. Shibata, K. Matsubayashi, H. Soeda, H. Takahashi, T. Shigeoka Y. Uwatoko
- 11:30 - 11:45      **High-Pressure Transport Studies in the Superconducting and Charge Density Wave Material NbSe<sub>2</sub>**  
**Owen Moulding** (University of Bristol, UK), I. Osmond, T. Muramatsu, F. Bangma, J. Buhot, , S. Fridemann
- 11:45 - 12:00      **Superconductor-insulator quantum phase transition in amorphous InO<sub>x</sub> at elevated pressures**  
**Bar Hen** (Tel Aviv University, Israel), Samar Layek, Victor Shelukhin, Eran Greenberg, Gregory Kh. Rozenberg, Alexander Palevski
- 10:30 - 12:15      **Spectroscopic & Structural Studies 1 - elements at high pressures**  
 Room                      Prague - East  
 Chair                        Mohamed Mezouar (ESRF, Grenoble, France)
- 10:30 - 11:00      **Phase transformations and P-T diagram of carbon at pressures up to 130 GPa**  
**Mikhail Popov** (TISNCM. Troitsk, Russia), V. Blank, B.A. Kulnitskiy
- 11:00 - 11:15      **Rubidium at Extreme Conditions**  
**Mario Santoro** (CNR-INO/LENS,Sesto Fiorentino, Italy),

## Program overview - Tuesday, 3<sup>rd</sup> September

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- 11:15 - 11:30      **Structural changes in elemental germanium at high pressure and high temperatures**  
**Liam Kelsall** (The University of Edinburgh, UK), Miriam Peña-Álvarez, Jack Binns, Chris J Pickard, Ross T. Howie, Eugene Gregoryanz
- 11:30 - 11:45      **Single-crystal elastic moduli  $C_{ij}(P)$  and shear modulus  $G(P)$  of solid argon up to 64 GPa from time-domain Brillouin scattering**  
**Andreas Zerr** (LSPM-CNRS, Université Paris, France), Samuel Raetz, Maju Kuriakose, Philippe Djemia, Sergey M. Nikitin, Nikolay Chigarev, Alain Bulou, Alexey Lomonosov, Vitalyi E. Gusev
- 11:45 - 12:00      **Multiple probes of Sulphur at high-pressure and temperature conditions**  
**Hannah Bartlett** (University of Edinburgh, UK), T. Kimura, M. Pena Alvarez, R. S. McWilliams
- 12:00 - 12:15      **Diffraction Studies of Phase Transitions and Strength in Vanadium**  
**Michael Stevenson** (University of Edinburgh, UK), A. L. Coleman, S. E. Finnegan, C. V. Storm, E. J. Pace, R. S. McWilliams, M. G. Gorman, S. A. Macleod, C. W. Wilson, S. R. Rothman, A. J. Comley, E. Floyd, C. A. Bolme, R. F. Smith, J. H. Eggert, A. E. Gleason, J. K. Wicks, J. S. Wark, D. McGonagle, M. I. McMahon
- 10:30 - 12:15      **Chemistry 1 - High Pressure Synthesis**  
Room                      Zürich  
Chair                        Jesus Gonzalez (Universidad de Cantabria, Santander, Spain)
- 10:30 - 11:00      **High-Pressure Route to Access and Recover Metastable Phases**  
**Venkata BHADRAM** (IMPMC-Sorbonne University, Paris, France), Venkata Bhadram
- 11:00 - 11:15      **Spark plasma sintering of fine-crystalline  $BaTiO_3$  synthesized in sub- and supercritical water**

## Program overview - Tuesday, 3<sup>rd</sup> September

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- Anastasia Kholodkova** (Lomonosov MSU, Moscow, Russia),  
Marina Danchevskaya, Yuri Ivakin, Serguei Ponomarev
- 11:15 - 11:30    **Impurity Control and functionalization of Polymorphic Phase of Boron Nitride Polycrystals and Single crystals obtained under High Pressure**  
**Takashi Taniguchi** (NIMS, Tsukuba, Japan),
- 11:30 - 11:45    **Surfactant Induced Reductant-Free Synthesis of Silver Nanoparticles in Hydrothermal Condition**  
**Hiroya Abe** (Osaka University, Japan), Kanako Yoshida.
- 11:45 - 12:00    **Preparation of ceramic preforms by hydrothermal method**  
**Georgy Panasyuk** (IONX RAS, Moscow, Russia), E.A.Semenov,  
I.V.Kozerozhets, V.N.Belan
- 10:30 - 12:15    **Theory 1 - Methods for Complex Systems**  
Room            Paris  
Chair            Ion Errea (UPV/EHU, Donostia/San Sebastian, Spain)
- 10:30 - 11:00    **Some new directions in random structure search**  
**Chris Pickard** (University of Cambridge, UK),
- 11:00 - 11:15    **Effect of pressure and U parameter on the electronic properties of rutile RuO<sub>2</sub>**  
**K.B. Joshi** (ML Sukhadia University, Udaipur, India), V. Maurya
- 11:15 - 11:30    **How to add error bars to DFT data**  
**Julia Contreras-Garcia** (Sorbonne Université-CNRS, Paris, France), F. Peccati, R. Laplaza
- 11:30 - 11:45    **Theoretical Study of One-dimensional Isentropic Flow under Ramp Wave Loading**  
**Yunsheng Jin** (Inst. of Fluid Phys., China Academy of Eng.-Phys., Mianyang, China), Chengwei Sun, Jianheng Zhao, Fuli Tan, Jichuan Wu

## Program overview - Tuesday, 3<sup>rd</sup> September

- 12:00 - 12:15      **Beyond regular polyhedra: evolutionary prediction and experimental high-pressure synthesis of SiOS**  
**Roman Martoňák** (Comenius University in Bratislava, Slovakia), O. Tóth, M. Santoro, F. Gorelli, G. Pietraperzia, M. Mezouar, , G. Garbarino
- 12:15 - 13:45      **Lunch Break**  
Room                      Vienna
- 13:45 - 15:15      **Pressure-induced phase transitions and quantum criticality 2 - Uranium Superconductors**  
Room                      Prague - West  
Chair                        Vladimír Sechovský (Charles University, Prague, Czech Republic)
- 13:45 - 14:15      **Squeezing out field-induced reentrant hidden-order in UR<sub>2</sub>Si<sub>2</sub>**  
**William Knafo** (LNCMI, Toulouse, France), S. Araki, D. Braithwaite, D. Aoki, G. Lapertot, G. Knebel, J. Flouquet
- 14:15 - 14:45      **A new uranium superconductor and half quantum vortices**  
**Andrew Huxley** (University of Edinburgh, UK)
- 14:45 - 15:00      **Tuning the uranium ferromagnetic superconductors with hydrostatic and uniaxial pressure**  
**Daniel Braithwaite** (Univ. Grenoble Alpes and CEA Grenoble, France), Dai Aoki, Jean-Pascal Brison, Jacques Flouquet, Georg Knebel, Ai Nakamura, Alexandre Pourret.
- 15:00 - 15:15      **Superconducting and normal state properties of nearly ferromagnetic UTe<sub>2</sub> under hydrostatic pressure.**  
**Michal Vališka** (Université Grenoble Alpes and CEA, France), Daniel Braithwaite, Gerard Lapertot, Georg Knebel, Jean-Pascal Brison, Jacques Flouquet
- 13:45 - 15:15      **Geosciences 4 - gas bearing compounds, hydrides**  
Room                      Prague - East

## Program overview - Tuesday, 3<sup>rd</sup> September

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- Chair Tetsuya Komabayashi (University of Edinburgh, UK)
- 13:45 - 14:15 **Understanding noble gas reactivity at high pressure**  
**Andreas Hermann** (University of Edinburgh, UK), Peter Schwerdtfeger, Maosheng Miao
- 14:15 - 14:30 **Synthesis of new hydrides at high pressures**  
**Viktor V. Struzhkin** (Carnegie Institution of Washington, USA), Jianjun Ying, Vitali Prakapenka, Eran Greenberg, DuckYoung Kim, Bing Li, Cheng Ji, Xiao-Jia Chen, Ho-kwang Mao
- 14:30 - 14:45 **High Pressure Chemistry of Phosphorus and Hydrogen**  
**Matteo Ceppatelli** (ICCOM-CNR and LENS, Florence, Italy), D. Scelta, M. Serrano-Ruiz, K. F. Dziubek, G. Garbarino, R. Bini, M. Peruzzini
- 14:45 - 15:00 **What we can learn from 1H-NMR in metal hydrides at mega-bar pressures?**  
**Thomas Meier** (BGI/Bayreuth University, Germany), Florian Trybel, Saiana Khandarkhaeva, Gerd Steinle-Neumann, Stella Chariton, Timofey Fedotenko, Sylvain Petitgirard, Michael Hanfland, Konstantin Glazyrin, Natalia Dubrovinskaia, Leonid Dubrovinsky
- 15:00 - 15:15 **Deuterium Interaction with fcc Iron at High Pressures and Temperatures**  
**Ilya Sholin** (Institute of Solid State Physics, RAS, Moscow, Russia), V.E. Antonov, V.M. Gurev, V.I. Kulakov, M.A. Kuzovnikov, V.Y. Zuykova
- 13:45 - 15:15 **Spectroscopic & structural studies 2 - Organic Molecular Systems at High Pressures**
- Room Zürich
- Chair Alfonso Muñoz (Universidad de la Laguna, Tenerife, Spain)
- 13:45 - 14:15 **Pressure-induced polymorphism of caprolactam: a neutron diffraction study**





## Program overview - Tuesday, 3<sup>rd</sup> September

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- Yun-Hee LEE** (Korea Research Institute of Standards and Science), Y.-J. Kim, S. Lee, H. Nada, G.W. Lee
- 14:45 - 15:00      **Measurements of strength at high pressure and strain rate using a high-power laser facility**  
**Emma Floyd** (AWE plc., Reading, UK), Andrew Comley, John Foster, Stephen Rothman, Philip Avraam, David McGonegle
- 15:00 - 15:15      **Isentropic Compression Experiments through Magnetic Flux Cumulation**  
**Zhuowei GU** (Institute of Fluid Physics, CAS, China), Zhongyu ZHOU, Yu LU, Jianheng ZHAO, Cangli LIU, Chengwei SUN
- 15:15 - 15:45      **Coffee Break**  
Room                      Berlin + Amsterdam
- 15:45 - 17:00      **Pressure-induced phase transitions and quantum criticality 3 - Mott Transitions**  
Room                      Prague - West  
Chair                      Jeroen Custers (Charles University, Prague, Czech Republic)
- 15:45 - 16:15      **The correlated metal on the border of Mott localisation in high-pressure NiS<sub>2</sub>**  
**Malte Grosche** (University of Cambridge, UK)
- 16:15 - 16:30      **Characterization and decomposition of the natural van der Waals heterostructure SnSb<sub>2</sub>Te<sub>4</sub> under compression**  
**Juan A. Sans** (Technical University of Valencia), Rosario Vilaplana, Estelina Lora Da Silva, Catalin Popescu, Vanesa Paula Cuenca-Gotor, Adrián Andrada-Chacón, Javier Sánchez-Benitez, Oscar Gomis, André Luis de Jesus Pereira, Plácida Rodríguez-Hernández, Alfonso Muñoz, Dominik Daisenberger, Braulio García-Domene, Alfredo Segura, Daniel Errandonea, Ravhi Kumar, Oliver Oeckler, Julia Contreras-García, Francisco Javier Manjón

## Program overview - Tuesday, 3<sup>rd</sup> September

- 16:30 - 16:45      **Insulator-metal transitions in  $\text{TMPX}_3$  van-der-Waals antiferromagnets**  
**Matthew J. Coak** (IBS-CCES, Seoul National University, Republic of Korea), Charles Haines, Dominik Daisenberger, Hayrullo Hamidov, Guilio Lampronti, Andrew Wildes, Suhan Son, Cheng Liu, Paul Nahai-Williamson, Je-Geun Park, Siddharth Saxena
- 16:45 - 17:00      **EXAFS study of Mott-Anderson transition in germanium monoxide**  
**Eran Sterer** (Nuclear Research Center Negev, Beer Sheva, ISRAEL)
- 15:45 - 17:00      **Geosciences 5 - gas bearing compounds, hydrides 2**  
Room                    Prague - East  
Chair                    Andreas Hermann (University of Edinburgh, UK)
- 15:45 - 16:15      **Synthesis and characterization of novel alkaline earth hydrides**  
**Miriam Peña Alvarez** (CSEC/University of Edinburgh, UK), Jack Binns, Andreas Hermann, Mary-Ellen Donnelly, Liam Kellsall, Philip Dalladay-Simpson, Ross T. Howie, Eugene Gregoryanz
- 16:15 - 16:30      **Crystal structures of novel lanthanum superhydrides**  
**Mikhail Kuzovnikov** (Max-Planck Institut für Chemie, Mainz, Germany), Alexander P. Drozdov, Panpan Kong, Vasily S. Minkov, Stanislav P. Besedin, Vitali B. Prakapenka, Eran Greenberg, Dmitry A. Knyazev, Mikhail I. Erements
- 16:30 - 16:45      **Ammonia hydrates under high pressure and high temperature: a new route to synthesize ionic/superionic compounds ?**  
**Sandra Ninet** (Sorbonne Université - IMPMC, Paris, France), H. Zhang, L. Andriambariarajaona, C. Liu, J.A. Queyroux, A. Mafety, K. Beneut, B. Baptiste, N. Guignot, G. Garbarino, A.M. Saitta, F. Datchi
- 15:45 - 17:00      **Spectroscopic & structural studies 3 - Novel Spectroscopic Techniques and Optical Materials**  
Room                    Zürich

## Program overview - Tuesday, 3<sup>rd</sup> September

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Chair	Gaston Garbarino (LENS, Florence, Italy)
15:45 - 16:15	Pressure Induced Emission <b>Bo ZOU</b> (Jilin University, China), G. Xiao, K. Wang, X. Yang,
16:15 - 16:30	Exploring Highly Active Photocatalysts at Extreme Conditions <b>Yang Lu</b> (HPSTAR, Shanghai, China),
16:30 - 16:45	Pressure- and Temperature-Dependent Structural Stability and Photoluminescence properties of LLM-105 Crystal <b>Zengming Zhang</b> (University of Science and Technology of China, Hefei, China ), Rucheng Dai, Zhongping Wang, Zengming Zhang
16:45 - 17:00	High Pressure Steady State Photoluminescence and Time-Resolved Photoluminescence Study of MnS/ZnS Core/Shell Quantum Dots <b>Da Huang</b> (University of Science and Technology of China, Hefei, China ), R. -C. Dai, Z. -P. Wang, Z. -M. Zhang
15:45 - 17:00	<b>Dynamical pressures &amp; shock physics 2</b>
Room	Paris
Chair	Reinhard Boehler (ORNL, USA)
15:45 - 16:15	High pressure physics in a repetitive regime at ELI-Beamlines <b>Noemie Jourdain</b> (ELI, Dolní Břežany, Czech Republic), Deepak Kumar, Vladimir Tikhonchuk, Stefan Weber
16:15 - 16:45	Laser systems and laser-driven sources of X-rays and accelerated particles at ELI Beamlines <b>Jaroslav Nejd</b> (ELI, Dolní Břežany, Czech Republic),
16:45 - 17:00	Shock-induced polymorphism in SiO <sub>2</sub> glass and alpha-quartz from in situ X-ray diffraction

## Program overview - Tuesday, 3<sup>rd</sup> September

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**Jean-Alexis Hernandez** (LULI, Ecole Polytechnique, CNRS), G. Morard, M. Guarguaglini, R. Alonso-Mori, A. Benuzzi-Mounaix, R. Bolis, G. Fiquet, E. Galtier, A. Gleason, S. Glenzer, F. Guyot, B. K. Ko, H. J. Lee, W. L. Mao, B. Nagler, N. Ozaki, A. Schuster, S. H. Shim, T. Vinci, , A. Ravasio

17:00 - 18:45

**Women in High Pressures**

Room

Prague - East

## Program overview - Wednesday, 4<sup>th</sup> September

Session	Chair	Time	Room	Speakers
Tu - PL 3	James Schilling	9:00 - 10:00	Prague	<b>Mikhail Eremets</b>
Coffee Break + Conference Foto		10:00 - 10:45	Berlin + Amsterdam (coffee) + Atrium of Hotel Duo (foto)	
General Assembly of EHPRG	Stefan Klotz	10:45 - 12:15	Prague	<b>Stefan Klotz</b> Clemens Prescher Alfonso Muñoz
Lunch Break		12:15 - 13:45	Vienna	
Excursions		14:00 - 19:00		

9:00 - 10:00 **Plenary Lecture 3**

Room Prague

Chair James Schilling ()

Speaker **Mikhail Eremets** (Max Planck Institute for Chemistry, Mainz, Germany)

### **Problems of metallic hydrogen and room temperature superconductivity**

10:00 - 10:45 **Coffee Break + Conference Foto**

Room Berlin + Amsterdam (coffee) + Atrium of Hotel Duo (foto)

10:45 - 12:15 **General Assembly of EHPRG**

Room Prague

12:15 - 13:45 **Lunch Break**

Room Vienna

14:00 - 19:00 **Excursions**

Room

## Program overview - Thursday, 5<sup>th</sup> September

Session	Chair	Time	Room	Speakers
Th - PL 4	Stefan Klotz	9:00 - 10:00	Prague	<b>Alessandra Ravasio</b>
Coffee Break		10:00 - 10:30	Berlin + Amsterdam	
Th-EM2	Fuminori Honda	10:30 - 12:15	Prague - West	<b>Patrick Rosa</b> Sergey V. Ovsyannikov Tomasz Poreba Wenge Yang Elena Condrea Xiangqi Wang
Th-Chem2	Mario Santoro	10:30 - 12:15	Prague - East	<b>Frederico Alabarse</b> Julien Haines Szymon Sobczak Mathieu Marchivie Victor N. Robinson
Th-SS4	Francisco J. Manjón	10:30 - 12:15	Zürich	<b>Javier Ruiz-Fuertes</b> Camilla Hjort Kronbo Kariyattuparamb A. Irshad Athanasios G. Kontos Virginia Monteseuro Padrón Enrico Bandiello
Th-Th2	Roman Martoňák	10:30 - 12:15	Paris	<b>Ion Errea</b> Byeongchan Lee Estelina Lora da Silva Daniela Kartoon Leonid Burakovskiy Gavin Woolman
Lunch Break		12:15 - 13:45	Vienna	
Th-EM3	Olivier Isnard	13:45 - 15:30	Prague - West	<b>Isabel Povedano</b> Pallavi Malavi Katsutoshi Aoki Stefan Klotz Itzhak Halevy Fuminori Honda
Th-Ins2	Rustem Khasanov	13:45 - 15:30	Prague - East	<b>Jean-Francois Roch</b> Marcus Schwarz Chi Long Chan Julia Mokdad Samuel Marre Jürgen Graf
Th-Chem3	Julien Haines	13:45 - 15:30	Zürich	<b>Dominique Laniel</b> Xiaoyu Sun Sumit Konar Xiaojiao Liu Anna Olejniczak
				<b>Miriam Marques</b>

## Program overview - Thursday, 5<sup>th</sup> September

Th-Th3	Julia Contreras-Garcia	13:45 - 15:30	Paris	Guy Makov Heather Wiebe Francesco Belli Alexander Kvashnin Hanyu Liu
Poster Session 2		15:30 - 17:15	Berlin	
Conference Dinner		19:00 - 23:00	Municipal House - Pilsen Restaurant	

9:00 - 10:00 **Plenary Lecture 4**

Room Prague

Chair Stefan Klotz ()

Speaker [Alessandra Ravasio](#) (LULI, Palaiseau, France)

**Investigation of structural transformations in high pressure shocked silicates from in-situ x-ray diffraction**

10:00 - 10:30 **Coffee Break**

Room Berlin + Amsterdam

10:30 - 12:15 **Electronic, Magnetic and Transport properties 2 - Magneto-transport phenomena in novel materials**

Room Prague - West

Chair Fuminori Honda (Tohoku University, Japan)

10:30 - 11:00 (P,T,hv) phase diagram of spin crossover compounds

[Patrick Rosa](#) (ICMCB/CNRS, Bordeaux, France), E. Tailleux, L. Poggini, M. Marchivie, P. Guionneau, B. Vignolle, A. Juhin, N. Boudji, F. Baudelet, P. Ferté, J.-P. Itié

11:00 - 11:15 **Low-temperature phase transitions in Fe<sub>4</sub>O<sub>5</sub> under high pressure**



## Program overview - Thursday, 5<sup>th</sup> September

- Sergey V. Ovsyannikov** (BGI/University of Bayreuth, Germany),  
M. Bykov, E. Bykova, K. Glazyrin, R. S. Manna, A. A. Tsirlin, V.  
Cerantola, I. Kuppenko, A. V. Kurnosov, I. Kantor, A. S. Pakho-  
mova, I. Chuvashova, A. I. Chumakov, R. Ruffer, C. McCammon,  
L. S. Dubrovinsky
- 11:15 - 11:30      **Pressure-induced polymerization and electrical conductivity in polyiodides.**  
**Tomasz Poreba** (PSI, Villigen, Switzerland), Nicola Casati,  
Michelle Ernst, Piero Macchi
- 11:30 - 11:45      **Giant Enhancements in Electronic Transport and Photoelectric Properties of Bismuth Oxysulfide by Pressure-driven 2D-3D Structural Reconstruction**  
**Wenge Yang** (HPSTAR, Shanghai, China), Ganghua Zhang
- 11:45 - 12:00      **Magnetotransport properties of Bi wires under effect of uni-axial deformation**  
**Elena Condrea** (Academy of Science of Moldova), A.Gilewski
- 12:00 - 12:15      **Pressure Modification of Anomalous Hall Effect in Layered  $\text{Fe}_3\text{GeTe}_2$**   
**Xiangqi Wang** (USTC, Hefei, China ), Zeyu Li, Min Zhang, Tao Hou, Jinggeng Zhao, Zilong Xu, Junbo Gong, Zhenhua Chi, Rucheng Dai, Zhongping Wang, Zhenhua Qiao, Zengming Zhang
- 10:30 - 12:15      **Chemistry 2 - Soft Materials, Guest-Host Systems**  
Room                      Prague - East  
Chair                        Mario Santoro (LENS, Florence, Italy)
- 10:30 - 11:00      **High pressure insertion and polymerization of hydrocarbons in VFI 1-D nanopores**  
**Frederico Alabarse** (Elettra Sincrotrone Trieste), Michelangelo Polisi, Marco Fabbiani, Jerome Rouquette, Mario Santoro, Julien Haines

## Program overview - Thursday, 5<sup>th</sup> September

- 11:00 - 11:15      **High-pressure, high temperature insertion of bismuth in micro- and mesoporous silica**  
**Julien Haines** (CNRS), Yixuan Zhao, Romain Viennois, Gaël Talbi, Vasy Veremeienko, Jérôme Rouquette, Patrick Hermet, Martine Cambon, Olivier Cambon, Mickaël Beaudhuin, Bruno Alonso, Arie van der Lee, Sébastien Clément, Pierre Toulemonde, Thomas Hansen
- 11:15 - 11:30      **Post-synthetic modifications of iron formate frameworks**  
**Szymon Sobczak** (Adam Mickiewicz University, Poznań, Poland), Andrzej Katrusiak
- 11:30 - 11:45      **Full description of the behavior of a Molecular Switch probed by Single Crystal and Powder XRD under pressure at variable temperature**  
**Mathieu Marchivie** (University of Bordeaux, France), Elodie Tailleur, Patrick Rosa, Jean-Paul Itié, Mike Probert, Philippe Guionneau
- 11:45 - 12:00      **Alkali Metals and the Chain-Melted Phase of Matter**  
**Victor N. Robinson** (CSEC & The University of Edinburgh, UK), Hongxiang Zong, Graeme J. Ackland, Gavin Woolman, Andreas Hermann, Sandro Scandolo
- 10:30 - 12:15      **Spectroscopic & Structural Studies 4 - high pressure structural chemistry of perovskites and other oxide materials**  
Room                      Zürich  
Chair                        Francisco J. Manjón (University of Valencia, Spain)
- 10:30 - 11:00      **Structural solution of the high-pressure polymorph of scintillating  $\beta$ -MgMoO<sub>4</sub> by means of single crystal x-ray diffraction**  
**Javier Ruiz-Fuertes** (Universidad de Cantabria, Santander, Spain), Alexandra Friedrich, Kris Radacki, Ines Collings, Daniel Errandonea, Enrico Cavalli, Placida Rodriguez-Hernandez, Alfonso Muñoz

## Program overview - Thursday, 5<sup>th</sup> September

- 11:00 - 11:15      **Combined High Pressure and Low Temperature Structural Studies of SrRuO<sub>3</sub>**  
**Camilla Hjort Kronbo** (Aarhus University, Denmark), Louise Ring Jensen, Davide Ceresoli, Francesca Menescardi, Martin Bremholm
- 11:15 - 11:30      **Cation size dependent phase structure of (Eu<sub>1-x</sub>La<sub>x</sub>)<sub>2</sub>O<sub>3</sub> at high pressures**  
**Kariyattuparamb A. Irshad** (Indira Gandhi Centre for Atomic Research, India), V. Srihari, S. Kalavathi, N. V. Chandra Shekar
- 11:30 - 11:45      **Structural Transformations in Cs<sub>2</sub>SrSn<sub>6</sub> Defect Perovskite under High Pressure**  
**Athanassios G. Kontos** (National Technical University of Athens, Greece), Maria Karnachoriti, Giannis Bounos, Constantinos C. Stoumpos, Leonidas Tsetseris, Andreas Kaltzoglou, Xiaofeng Guo, Xujie Lü, Polycarpos Falaras, Mercouri G. Kanatzidis, Yannis S. Raptis
- 11:45 - 12:00      **Unveiling the effect of the Pb 6s electronic levels in distinct PbMoO<sub>4</sub> under high pressure**  
**Virginia Monteseuro Padrón** (Universidad de Valencia, Spain), J. Ruiz-Fuertes, J. Contreras-García, P. Rodríguez-Hernández, A. Muñoz, D. Errandonea
- 12:00 - 12:15      **Phase transition of partially-hydrated CePO<sub>4</sub> under high-pressure conditions**  
**Enrico Bandiello** (University of Valencia, Spain), Daniel Errandonea, Sergio Ferrari, Julio Pellicer-Porres, Domingo Martínez-García, S. Nagabhusan Achary, Avesh K. Tyagi, Catalin Popescu
- 10:30 - 12:15      **Theory 2 - Electronic properties and phase transitions**  
Room                      Paris  
Chair                      Roman Martoňák (Comenius University in Bratislava, Slovakia)
- 10:30 - 11:00      **Quantum ionic effects in high-temperature superconducting hydrides at high pressure**

## Program overview - Thursday, 5<sup>th</sup> September

- Ion Errea** (University of the Basque Country, San Sebastian, Spain),
- 11:00 - 11:15      **First principles calculations of liquid Mo under pressure**  
**Byeongchan Lee** (Kyung Hee University, Gyeonggi, Republic of Korea), Geun Woo Lee
- 11:15 - 11:30      **Theoretical study of phase transitions in  $Sb_2S_3$ ,  $Bi_2S_3$  and  $Sb_2Se_3$  under compression**  
**Estelina Lora da Silva** (Universitat Politècnica de València, Spain), J. M. Skelton, P. Rodríguez-Hernández, A. Muñoz, D. Martínez-García, F. J. Manjón
- 11:30 - 11:45      **Structural and electronic properties of the incommensurate Bi-III phase**  
**Daniela Kartoon** (Ben Gurion University of the Negev, Israel), Guy Makov
- 11:45 - 12:00      **Recent Ab Initio Studies of Phase Diagrams: Al, Ti, Mo, and W**  
**Leonid Burakovsky** (LANL, USA), Dean L Preston, Daniel Errandonea
- 12:00 - 12:15      **Power Factor Improvements in Thermoelectric PbTe under Stress**  
**Gavin Woolman** (The University of Edinburgh, UK), Ingo Loa
- 12:15 - 13:45      **Lunch Break**  
Room                      Vienna
- 13:45 - 15:30      **Electronic, Magnetic and Transport properties 3 - Magnetism under pressure**  
Room                      Prague - West  
Chair                        Olivier Isnard (Institute Neel/Grenoble University, France)
- 13:45 - 14:15      **Evolution of the magnetic order of  $Sr_3Ir_2O_7$  under pressure by REXS**

## Program overview - Thursday, 5<sup>th</sup> September

- Isabel Povedano** (University of Edinburgh, UK), L. S. I. Veiga, D. G. Porter, J. G. Vale, R. S. Perry, D. F. McMorrow, K. Kamenev, A. Bombardi
- 14:15 - 14:30 **Antiferromagnetism of  $\beta$ -Ce under Hydrostatic Pressure**  
**Pallavi Malavi** (Washington University in St. Louis, USA), Yuhang Deng, Francois Guillou, Yaroslav Mudryk, Vitalij Pecharsky, James S. Schilling
- 14:30 - 14:45 **Neutron Diffraction Study of Crystal and Magnetic Structures of Manganese Deuteride at High Pressure**  
**Katsutoshi Aoki** (The University of Tokyo, Japan), A. Machida, H. Saitoh, K. Fukuyama, K. Komatsu, A. Sano-Furukawa, T. Hattori, S. Machida, K. Funakoshi, T. Sato, S. Orimo
- 14:45 - 15:00 **Crystal and Magnetic Structure of MnO to 9 GPa by Neutron Diffraction**  
**Stefan Klotz** (Sorbonne University, Paris, France), Kazuki KOMATSU, Asami SANO-FURUKAWA, Shinichi MACHIDA, Takanori HATTORI
- 15:00 - 15:15 **Preliminary resistivity results on  $U_2 Ni_2 Sn$  single crystals**  
**Itzhak Halevy** (IAEC-NRCN, Beer-Sheva, Israel ), Kolomiets, S. Mašková, J. Prchal, A.V. Andreev, L. Havela
- 15:15 - 15:30 **Effect of pressure on the ferromagnetism of  $UCu_2 P_2$**   
**Fuminori Honda** (NIMS/Tohoku University, Japan), K. Kitabayashi, J. Prchal, J. Valenta, M. Divis, I. Turek, D. Kaczorowski, D. X. Li, A. Maurya, D. Aoki, , L. Havela
- 13:45 - 15:30 **Instrumentation, New Techniques 2**  
Room Prague - East  
Chair Rustem Khasanov (PSI, Villigen, Switzerland)
- 13:45 - 14:15 **Magnetic measurements on micron-size samples under high pressure using designed NV centers**

## Program overview - Thursday, 5<sup>th</sup> September

- Jean-Francois Roch** (), T. Plisson, M. Lesik, L. Toraille, J. Renaud, F. Occelli, M. Schmidt, O. Salord, A. Delobbe, T. Debuisschert, L. Rondin, P. Loubeyre
- 14:15 - 14:30      **Towards smarter high pressure cells: Integrated pressure calibration for individual heated multianvil experiments**  
**Marcus Schwarz** (TU Bergakademie Freiberg, Germany), Christian Schimpf
- 14:30 - 14:45      **Investigation of Diesel Formulations and Model Mixtures under High-Pressure Environment**  
**Chi Long Chan** (Imperial College London, UK), Sally Lee, Kenneth Lewtas, Nicholas J. Brooks
- 14:45 - 15:00      **New probes for insulators under pressure**  
**Julia Mokdad** (Univ. Grenoble Alpes & CEA Grenoble, France), Christophe Marin, Daniel Braithwaite, Georg Knebel, Jean-Pascal Brison
- 15:00 - 15:15      **High pressure / High temperature Microfluidics: Unique tools with multiple applications**  
**Samuel Marre** (CNRS Bordeaux, France), Anaïs Cario, Olivier Nguyen, Cyril Aymonier, Carole Lecoutre, Yves Garrabos
- 15:15 - 15:30      **Getting the Most Data out of Your High-Pressure Experiment**  
**Jürgen Graf** (Incoatec GmbH, Geesthacht, Germany ), Tobias Stuerzer, Holger Ott, Przemyslaw Dera, Martin Adam, Michael Ruf
- 13:45 - 15:30      **Chemistry 3 - High Energy Density Materials**  
Room                      Zürich  
Chair                        Julien Haines (University of Montpellier, France)
- 13:45 - 14:15      **Synthesis of novel polynitrogen anions in magnesium-nitrogen salts**

## Program overview - Thursday, 5<sup>th</sup> September

- Dominique Laniel** (BGI/University of Bayreuth, Germany), Bjoern Winkler, Egor Koemets, Timofey Fedotenko, Maxim Bykov, Elena Bykova, Leonid Dubrovinsky, Natalia Dubrovinskaia
- 14:15 - 14:30 **New Phases Discovery of  $\epsilon$ -CL-20 under High Pressure up to 60 GPa**  
**Xiaoyu Sun** (University of Science and Technology, Hefei, China), Xiangdong Li, Zhilei Sui, Xiangqi Wang, Junke Wang, Rucheng Dai, Zhongping Wang, Zengming Zhang
- 14:30 - 14:45 **TNT Polymorphs under Hydrostatic Compression: A Combined Neutron Diffraction and Density Functional Theory Investigation**  
**Sumit Konar** (University of Edinburgh, UK), Adam A. L. Michalchuk, Nilgun Sen, Craig L. Bull, Carole A. Morrison, Colin R. Pulham
- 14:45 - 15:00 **High-Pressure Crystallisation Studies of Biodiesel and Methyl Stearate**  
**Xiaojiao Liu** (University of Edinburgh, UK), Colin R. Pulham
- 15:00 - 15:15 **High-pressure studies of high-nitrogen-content pyridazine-based compounds**  
**Anna Olejniczak** (Poznan, Poland)
- 13:45 - 15:30 **Theory 3 - s-p Elements**  
Room Paris  
Chair Julia Contreras-Garcia (Sorbonne Université-CNRS, Paris, France)
- 13:45 - 14:15 **Liquid-liquid phase transition in warm dense hydrogen: a topological approach**  
**Miriam Marques** (University of Edinburgh, UK), H. Y. Geng, Q. Wu, G. J. Ackland
- 14:15 - 14:30 **Rb melting curve and phase transitions at high pressure with Machine Learning**

## Program overview - Thursday, 5<sup>th</sup> September

**Guy Makov** (Ben-Gurion University, Beer Sheva, Israel), Eyal Oren, Eyal Yahel

14:30 - 14:45 **Nuclear quantum effects in compressed hydrogen and deuterium from path integral molecular dynamics**

**Heather Wiebe** (University of Edinburgh, UK), Hongxiang Zong, Graeme Ackland

14:45 - 15:00 **Quantum Anharmonic Effects on the Superconducting LaH<sub>10</sub>**

**Francesco Belli** (CSIC-UPV/EHU, Donostia, Spain), Ion Errea

15:00 - 15:15 **Computational search for new Th-H high-TC superconductors at moderate pressures**

**Alexander Kvashnin** (Skolkovo Institute of Science and Technology, Russia), Ivan A. Kruglov, Dmitrii V. Semenov, Artem R. Oganov

15:15 - 15:30 **Predicted novel helium compounds under high pressure**

**Hanyu Liu** (Jilin University, China), Jurong Zhang, Xiaolei Feng, Simon A. T. Redfern, Changfeng Chen, Yanming Ma

15:30 - 17:15 **Poster Session 2**

Room Berlin

19:00 - 23:00 **Conference Dinner**

Room Municipal House - Pilsen Restaurant

Th-P-01

**Pressure media for high pressure experiments**

Daniel Staško, J. Prchal, M. Klicpera

Th-P-02

**Sound velocities and elastic moduli of phases I and V of silicon at high pressures**

Feng Xu, B. Zhao, L. Belliard, H. Huang, B. Perrin, P. Djemia, A. Zerr



## Program overview - Thursday, 5<sup>th</sup> September

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Th-P-03

Investigation of Diesel Formulations and Model Mixtures under High-Pressure Environment  
Chi Long Chan, Sally Lee, Kenneth Lewtas, Nicholas J. Brooks

Th-P-04

Single Crystal Neutron Diffraction in Diamond Anvil Cells: DKDP as a Test Case  
Bernhard Massani, M. Guthrie, J. Loveday

Th-P-05

Development of an advanced dynamic-diamond anvil cell and its application to deriving equation of state of molecular liquids  
Yun-Hee LEE, J.B. Kim, Y.-J. Kim, Y.C. Cho, S. Lee, G.W. Lee

Th-P-06

Reusable Coil Setup For High Pressure Magnetic Properties Studies  
Christophe Guillaume, Vasileios Tzanos, Anna Kusmartseva

Th-P-07

Solidification phenomena of water monitored by using an advanced dynamic-diamond anvil cell  
Yong Chan Cho, Yun-Hee Lee, Yong-Jae Kim, Sooheyong Lee, Geun Woo Lee

Th-P-08

Development of a new internally-resistive heated diamond-anvil cell for planetary mineral physics  
Emiko Sugimura-Komabayashi, Tetsuya Komabayashi, Ryan Stewart McWilliams

Th-P-09

New internally heated diamond anvil cell for fast heating and cooling rates at high pressure  
Yimin Mijiti, Marco Perri, Angela Trapananti, Marco Minicucci, Lucie Nataf, Jean Coquet, Francois Baudelet, Andrea Di Cicco

Th-P-10

HgMn<sub>7</sub>O<sub>12</sub>, a novel improper ferroelectric, under pressure  
Anna Herlihy, W. T. Chen, Nick Funnell, M. S. Senn

Th-P-11

## Program overview - Thursday, 5<sup>th</sup> September

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Anomalous structural behaviour near a Mott transition in compressed  $\text{Ca}_2\text{RuO}_4$

Andreas Hermann, Harry D. J. Keen, Stephen R. Julian

Th-P-12

Short N...N and CH...N contacts in the ambient and high-pressure polymorphs of a high-nitrogen-content compound

Marcin Podsiadło, Anna Olejniczak, Anna Katrusiak, Andrzej Katrusiak

Th-P-13

High pressure study of langasite  $\text{Ba}_3\text{TaFe}_3\text{Si}_2\text{O}_{14}$  up to 60 GPa and low temperatures

Yulia Nikiforova, I.S. Lyubutin, A.G. Gavriluk, I.A. Troyan, A.G. Ivanova, S.S. Starchikov, S.N. Sul'yanov, S.N. Axenov

Th-P-14

Pressure effect on ZrNiAl compounds from UTX family

Petr Opletal, P. Proschek, J. Valenta, M. Míšek, J. Prokleška, V. Sechovský

Th-P-15

Probing Structural Changes in the Properties of Matter Using Extreme Conditions

Emma M. Ehrenreich-Petersen, Francesca Menescardi, Davide Ceresoli, Justin Jeanneau, Mads Fonager Hansen, Martin Bremholm

Th-P-16

Revisiting transitions in silicon under high pressure: a new look at the stability of the Imma, Cmce, and other compressed phases

Enrique Zanardi, Andrés Mujica

Th-P-17

Structural, magnetic and electronic transitions in  $\text{Ba}_3\text{NbFe}_3\text{Si}_2\text{O}_{14}$  at high pressures up to 70 GPa by synchrotron Mössbauer source spectroscopy

Sergey Starchikov, I.S. Lyubutin, A.G. Gavriluk, I.A. Troyan, A.G. Ivanova, Yu.A. Nikiforova, S.N. Axenov

Th-P-18

X-Ray Diffraction at Multi-Megabar Conditions

Christian Storm, Edward, J. Pace, Sarah E. Finnegan, Michael G. Stevenson, Simon G. MacLeod, Malcolm I. McMahon

## Program overview - Thursday, 5<sup>th</sup> September

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Th-P-19

High Pressure Structures in the Trivalent Lanthanides

Sarah Finnegan, E.J. Pace, C.V. Storm, M.G. Stevenson, S.G. MacLeod, M.I. McMahon

Th-P-20

Effect of pressure on a Charge Density Wave transition in the  $m=10$  member of the MonoPhosphate Tungsten Bronze Family

Elen Duverger-Nédellec, Alain Pautrat, Olivier Pérez, Baptiste Vignolle, Patrick Rosa

Th-P-21

Multiple phase transitions of new type phase change materials  $\text{Sc-Sb}_2\text{Te}_3$

Teng Zhang, Kai Zhang, Wenge Yang, Gang Wang

Th-P-22

Experimental and theoretical analyses of  $\beta\text{-In}_2\text{S}_3$  under compression

Samuel Gallego Parra, Óscar Gomis, Rosario Vilaplana, Estelia Lora da Silva, Alfonso Muñoz, Plácida Rodríguez Hernández, Catalin Popescu, Domingo Martínez García, Francisco Javier Manjón

Th-P-23

High-pressure study of  $\text{PbCrO}_4$  by single-crystal X-ray diffraction and ab initio simulations. Structural and vibrational properties

Alfonso Muñoz, Javier Gonzalez-Platas, Plácida Rodríguez-Hernández, Daniel Errandonea

Th-P-24

Study of the  $\text{PbSO}_4$  Anglesite under high pressure

Plácida Rodríguez Hernández, David Santamaria-Pérez, Raquel Chulia-Jordan, Dominik Daisenberg, A. Muñoz

Th-P-25

Phase transition mechanisms of methane hydrate under high pressure by time-resolved XRD and Raman spectroscopy

Hisako Hirai, H. Kadobayashi, N. Hirao, Y. Ohishi, M. Ohtake, Y. Yamamoto

Th-P-26

Structural phase transitions and the EoS of  $\text{SnSe}$  and  $\text{SnTe}$  at pressures up to 2 Mbar

Anna Ivanova, I.A. Troyan, A.G. Gavriliuk, S.S. Starchikov, A.S. Baskakov, K.V. Frolov, D.A.

## Program overview - Thursday, 5<sup>th</sup> September

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Chareev, I.S. Lyubutin

Th-P-27

[The Fe-N system at pressures of the Earth's inner core](#)

Dinara Sagatova, N.E. Sagatov, P.N. Gavryushkin, K.D. Litsov

Th-P-28

[Phase relations of the iron carbides Fe<sub>2</sub>C, Fe<sub>3</sub>C, Fe<sub>7</sub>C<sub>3</sub> at the Earth's core conditions](#)

Nursultan Sagatov, Pavel N. Gavryushkin, Talgat M. Inerbaev, Konstantin D. Litsov

Th-P-29

[Ultrasonic Study and Dielectric Spectroscopy of Pyridine under High Pressures at different Temperatures](#)

Elena Gromnitskaya, Igor Danilov, Mikhail Kondrin, Vadim Brazhkin

Th-P-30

[Ferromagnetic to paramagnetic transition of SrRuO<sub>3</sub> under pressure](#)

Trieu Phuong Anh Tong, Pau Jorba, Marc Seifert, Stefan Kunkemöller, Kevin Jenni, Markus Braden, James S. Schilling, Christian Pfeleiderer

Th-P-31

[The Existence of Lifshitz Transitions in ZrSiSe under High Pressure: The Experimental and First Principles Calculation](#)

Min Zhang, Xiangqi Wang, Azizur Rahman, Rucheng Dai, Zhongping Wang, D. Kraus, Zengming Zhang

Th-P-32

[Volume compression of period 4 elements: Zn, Ge, As, and Se up to multimegabar pressures](#)

Yuichi Akahama, Kouta Kamiue, Naoki Okawa, Saori Kawaguchi, Naohisa Hirao, Yasuo Ohishi

Th-P-33

[Phase transition kinetics and titanium compressibility](#)

Alexander Sedov, A.E. Shestakov

Th-P-34

[Compressibility and phase transition in a zirconium alloy](#)

Alexander Shestakov, A.V. Sedov

## Program overview - Thursday, 5<sup>th</sup> September

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Th-P-35

[Instability of diamond in the pressure range of 55-115 GPa](#)

Valentin Churkin, M.Yu. Popov, A.N. Kirichenko, B.A. Kulnitskiy, I.A. Perezhogin, V.D. Blank

Th-P-36

[Emergence of a quantum coherent state at the border of ferroelectricity](#)

Matthew John Coak, Charles Haines, Cheng Liu, Stephen Rowley, David Jarvis, Gilbert Lonzarich, Siddharth Saxena

Th-P-37

[Pressure induced amorphization of A-site deficient  \$\text{La}\_{0.333}\text{NbO}\_3\$  perovskite – Raman spectroscopic and x-ray diffraction investigations](#)

Joseph Boby, S. Massardo, M. M. Carnasciali, C. Marini, M. Pani, B. J. Kennedy, A. Lausi

Th-P-38

[Investigation of the elastic properties of amorphous polymers by using Frequency-Domain Brillouin light scattering](#)

Young-Ho Ko, Kyoung Hun Oh, Kwang-Joo Kim

Th-P-39

[Pressure response of the metal-organic framework MIL-101 filled with metal nanoparticles](#)

Anna Celeste, Abdelmalek Malouche, Claudia Zlotea, Francesco Capitani

Th-P-40

[Evolution of the crystal structures and spectroscopic in polymorphs of 1,8-diacetylpyrene](#)

Anna Makal, Daniel Tchoń

Th-P-41

[Structural stability of  \$\text{CsCaCl}\_3\$  perovskite under pressure](#)

Marina Teresa Candela, J.A. Barreda- Argüeso, J.A. Gonzalez, F. Rodriguez, A.C. Perdigón, S.A.T. Redfern, F. Aguado

Th-P-42

[Iron spin transition in bridgmanite revisited](#)

Sakrowski, Robin, Georg Spiekermann, Christian Albers, Christian Sternemann, Metin Tolan, Max Wilke

## Program overview - Thursday, 5<sup>th</sup> September

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Th-P-43

[Discovery of pressure-induced transition of aurophilic gold iodide](#)

Virginia Monteseuro Padrón, Daniel Errandonea, S. Nagabhusan Achary, Juan A. Sans, F. Javier Manjón, Samuel Gallego-Parra, Catalin Popescu

Th-P-44

[Pressure-Induced-Phase Transition and Photoluminescence in Pyrochlore  \$\text{Ho}\_2\text{Sn}\_2\text{O}\_7\$](#)

Zhao Yongsheng, Nana Li, Shuailing Ma, Yonggang Wang, Wenge Yang

Th-P-45

[Phase transition of captopril: a Raman scattering study](#)

Paulo de Tarso Cavalcante Freire, D.L.M. Vasconcelos, C.B. Silva, J.G. da Silva Filho, P.F. Façanha Filho, A.M.R. Teixeira, J.A. Lima Jr., P.S.R. Ribeiro

Th-P-46

[High-pressure behavior of  \$\epsilon\$ -FeOOH inferred from experimental study](#)

Osamu Ikeda, Tatsuya Sakamaki, Akio Suzuki

Th-P-47

[Electronic and structural response to pressure in the hyperkagome-lattice  \$\text{Na}\_3\text{Ir}\_3\text{O}\_8\$](#)

Fei Sun, H. Zheng, Y. Liu, E. D. Sandoval, C. Xu, J. Xu, C. Q. Jin, C. J. Sun, W. G. Yang, H. K. Mao, J. F. Mitchell, A. N. Kolmogorov, and D. Haskel

Th-P-48

[Dimerization of the honeycomb iridate  \$\alpha\$ - \$\text{Li}\_2\text{IrO}\_3\$  under pressure](#)

Christine Kuntscher, V. Hermann, M. Altmeyer, J. Ebad-Allah, F. Freund, A. Jesche, A. A. Tsirlin, M. Hanfland, P. Gegenwart, I. I. Mazin, D. I. Khomskii, R. Valentí

Th-P-49

[Pressure-induced polymerization and electrical conductivity in polyiodides.](#)

Tomasz Poreba, Nicola Casati, Michelle Ernst, Piero Macchi

Th-P-50

[High Pressure Raman Scattering study on  \$\text{BaZr}\(\text{PO}\_4\)\_2\$](#)

Meera Varma, H. K. Poswal

Th-P-51

## Program overview - Thursday, 5<sup>th</sup> September

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### Structural Study of Germante Glass under Pressure

Osamu Ohtaka, M Yoshida, Y. Ohnishi, H. Arima, K. Funakoshi, D. Wakabayashi, N. Funamori

Th-P-52

### Pressure-Induced Conformational Change of a Dipeptide. A Computational Study

Luboš Plamitzer, P. Bouř

Th-P-53

### Rapid Compression of Prototype Sand-like Systems using Atomistic Molecular Dynamic Simulations

ShinYoung Kang, Daniel Orlikowski

Th-P-54

### Tin chalcogenides under compression: an ab initio study

Silvana Radescu, A. Mujica, P. Rodríguez-Hernández, A. Muñoz, J.A. Sans, , F.J. Manjón

Th-P-55

### Ab initio study of possible metastable occupation of tetrahedral sites in Palladium Hydride compounds

Antonella Meninno, Ion Errea.

Th-P-56

### Influence of external factors (high temperatures, pressures) on soft matter systems

Nataliia Atamas, Dmitro Gavryushenko

Th-P-57

### The Raman signal from a hindered hydrogen rotor

Peter Cooke, Ioan B. Magd'au, Miriam Pena-Alvarez, Veronika Afonina, Philip Dalladay-Simpson, Xiao-Di Liu, Ross T. Howie, Eugene Gregoryanz, Graeme J. Ackland

Th-P-58

### Magnetization measurement methods

Jan Prokleska, Petr Proschek, Petr Opletal, Attila Bartha, Jaroslav Valenta, Jiří Pospíšil, Klára Uhlířová, Vladimír Sechovský

Th-P-59

### Thermal expansion measurement methods



## Program overview - Thursday, 5<sup>th</sup> September

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Jan Prokleska, Petr Proschek, Petr Opletal, Attila Bartha, Jaroslav Valenta, Vladimír Sechovský

Th-P-60

**Magnetic and structural properties of  $\text{Fe}_5\text{SiB}_2$  under pressure**

Jiří Kaštil, Razvan Hirian, Olivier Isnard



## Program overview - Friday, 6<sup>th</sup> September

Session	Chair	Time	Room	Speakers
Fr-EM4	Ingo Loa	9:00 - 10:45	Prague - West	<b>James S. Schilling</b> Audry Grockowiak Rustem Khasanov Alexander Drozdov Sukanta Karmakar
Fr-Chem4	TBD	9:00 - 10:45	Prague - East	<b>Roberto Bini</b> Atsuko Nakayama Jesus Gonzalez Valentin Churkin Masashi Tanaka Konstantin Litasov
Fr-SS5	Javier Ruiz-Fuertes	9:00 - 10:45	Zürich	<b>Francisco Javier Manjón</b> Kazuhiro Fuchizaki Chih-Ming Lin M. B. Shoker
Coffee Break		10:45 - 11:15	Berlin + Amsterdam	
Fr - PL 5	Milan Houška	11:15 - 12:15	Prague	<b>Jiřina Bartůňková</b>
Awards and Closing Ceremony		12:15 - 12:30	Prague	

9:00 - 10:45 **Electronic, Magnetic and Transport properties 4 - Superconductivity and Charge Order**

Room Prague - West

Chair Ingo Loa (University of Edinburgh, UK)

9:00 - 9:30 **Search for Superconductivity in Alkali Metals under High Pressure**  
**James S. Schilling** (Washington University, St. Louis, USA),  
Yuhang Deng

9:30 - 10:00 **High pressure, high magnetic field Fermiology studies of YBCO<sub>6.50</sub>**  
**Audry Grockowiak** (NHMFL, Tallahassee, USA ), W.A. Coniglio,  
S.W. Tozer

10:00 - 10:15 **Type-I superconductivity in Ga-II phase of elemental Gallium**  
**Rustem Khasanov** (PSI, Villigen, Switzerland), Joel Verezhak,  
Hubertus Luetkens, Elvezio Morenzoni, Alex Amato

## Program overview - Friday, 6<sup>th</sup> September

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- 10:15 - 10:30      **Superconductivity at 250 K in lanthanum hydride under high pressures**  
**Alexander Drozdov** (Max Planck Institute for Chemistry, Mainz, Germany), P. P. Kong, V. S. Minkov, S. P. Besedin, M. A. Kuzovnikov, S. Mozaffar, L. Balicas, F. F. Balakirev, D. E. Graf, V. B. Prakapenka, E. Greenberg, D. A. Knyazev, M. Tkacz, , M. I. Erements
- 10:30 - 10:45      **Infrared spectroscopic measurements of structural transition and charge dynamics in 1T-TiTe<sub>2</sub> under pressure**  
**Sukanta Karmakar** (Bhabha Atomic Research Centre, Mumbai, INDIA), U. Dutta, S. Sahoo, P. Malavi, F. Piccirilli, P. Di Pietro, A. Perucchi, , S. Lupi
- 9:00 - 10:45      **Chemistry 4 - Carbon Allotropes**  
Room                      Prague - East  
Chair                      TBD (TBD)
- 9:00 - 9:30        **Playing with temperature in the synthesis of nitrogen rich carbon nanothreads**  
**Roberto Bini** (LENS, Sesto Fiorentino, Italy ), Samuele Fanetti, Marcelo M. Nobrega
- 9:30 - 9:45        **Raman study on few-layer graphene pressurized in hydrogen gas**  
**Atsuko Nakayama** (Iwate University, Japan), Yumiko Natsuya, Riku Takahashi, Satoshi nakano
- 9:45 - 10:00      **Pressure dependence of Raman modes in double wall carbon nanotubes (DWCNTs) filled with 1D nanocrystalline CdSe semiconductor**  
**Jesus Gonzalez** (Universidad de Cantabria, Spain), E. Belandria, E. Flahaut, Fernando Rodríguez, Rafael Valiente
- 10:00 - 10:15      **Ultrasmall diamond nanoparticles with unusual incompressibility**

## Program overview - Friday, 6<sup>th</sup> September

- Valentin Churkin** (TISNCM, Troitsk, Russia), Mikhail Popov, Danila Ovsyannikov, Almaz Khabibrakhmanov, Alexey Kirichenko, Elena Skryleva, Yury Parkhomenko, Mikhail Kuznetsov, Sergei Nosukhin, Pavel Sorokin, Sergey Terentiev, Vladimir Blank
- 10:15 - 10:30      **High Pressure Polymerization of Metal Doped C<sub>60</sub> In an Attempt to Prepare Carbon Clathrate Compounds**  
**Masashi Tanaka** (Kyushu Institute of Technology, Japan), Shoji Yamanaka
- 10:30 - 10:45      **Trace element composition of synthetic diamonds: Evidences for anthropogenic contamination of natural ophiolitic rocks**  
**Konstantin Litasov** (Sobolev Institute of Geology and Mineralogy, Novosibirsk, Russia), Hiroyuki Kagi, Tatyana Bekker, Takafumi Hirata
- 9:00 - 10:45      **Spectroscopic & structural studies 5 - Chemical Bonding at High Pressures**  
Room                      Zürich  
Chair                      Javier Ruiz-Fuertes (Universidad de Cantabria, Santander, Spain)
- 9:00 - 9:30              **Metavalent bonding under pressure: the case of orpiment**  
**Francisco Javier Manjón** (Universitat Politècnica de València, Spain), Vanesa Paula Cuenca-Gotor, Juan Ángel Sans, Óscar Gomis, Andrés Mujica, Silvana Radescu, Alfonso Muñoz, Plácida Rodríguez-Hernández, Estelina Lora da Silva, Catalin Popescu, Jordi Ibáñez, Rosario Isabel Vilaplana
- 9:30 - 9:45              **The pressure-induced liquid-liquid crossover of Ge<sub>4</sub> identifiable as a percolation transition**  
**Kazuhiro Fuchizaki** (Ehime University, Japan), Hiroki Naruta
- 9:45 - 10:00              **Effects of manganese addition on pressure-induced intrinsic stacking fault and phase transition in CoCrFeMnNi high entropy alloys**

## Program overview - Friday, 6<sup>th</sup> September

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**Chih-Ming Lin** (National Tsing Hua University, Taiwan), Ching-Pao Wang, Sean R. Shieh, Yao-Jen Chang, Tony Huang, Dong-Zhou Zhang, Jien-Wei Yeh, An-Chou Yeh, , Jenh-Yih Juang

10:00 - 10:15 [Raman/x-ray-diffraction/ab-initio study of cubic Zn<sub>1-x</sub> Cd<sub>x</sub> Se \(x≤0.3\) at ambient and high pressure](#)

**M. B. Shoker** (Université de Lorraine, Metz, France ), O. Pagès, H. Dicko, A. Polian, A.V. Postnikov, V.J.B. Torres, F. Firszt, K. Strzałkowski, A. EnNaciri, L. Broch, A. Maillard, J.-P. Itié

10:45 - 11:15

**Coffee Break**

Room

Berlin + Amsterdam

11:15 - 12:15

**Plenary Lecture 5**

Room

Prague

Chair

Milan Houška (Food Research Institute, Prague, Czech Republic)

Speaker

[Jiřina Bartůňková](#) (Charles University, Prague, Czech Republic )

**High hydrostatic pressure induces immunogenic cell death: implication for the design of dendritic cell-based antitumor immunotherapy**

12:15 - 12:30

**Awards and Closing Ceremony**

Room

Prague