EMPG XVI

16th International Conference on « Experimental Mineralogy, Petrology and Geochemistry »

June 17 – 21, 2018

Program

of Talks & Posters

Clermont-Ferrand, France
EMPG XVI
Sixteenth International Symposium on Experimental Mineralogy, Petrology and Geochemistry

Clermont-Ferrand, 17-21 June 2018

Sunday June, 17

12:00  Registration Opens
16:00 – 20:00  Icebreaker
Monday June, 18

09:00  Welcome to EMPG XVI – N. Bolfan-Casanova – Amphi A002 –

Session: Mantle Melting – Amphi A002 –

09:15  KEYNOTE
E.K. Sarafian, G. Gaetani, E.H. Hauri and A.R. Sarafian
“Experimental determination of the H$_2$O-undersaturated peridotite solidus from 1.0 to 2.5 GPa using olivine sphere hygrometers”

09:45  D.A. Neave, O. Namur, O. Shorttle and F. Holtz
“Basaltic magmatism’s biased record of mantle chemistry”

10:00  G. Borghini, P. Fumagalli and E. Rampone
“Mantle modification via pyroxenite-peridotite reaction: an experimental study at 2 GPa”

10:15  P. Fumagalli, G. Borghini, J. Francomme and S. Poli
“Melt-dunite interactions at 0.5 and 0.7 GPa: experimental constraints on the origin of olivine-rich troctolites”

10:30  F. Nabiei, M. Cantoni, J. Badro, C. Hébert, T. Dennenwaldt, R. Gaal and P. Gillet
“3D chemical characterization of melting at lower mantle conditions in the laser heated diamond anvil cell”

10:45  COFFEE BREAK

Session: Mineral Physics – Elastic Properties – Amphi A002 –

11:15  Keynote
Y. Wang, F. Shi, T. Yu and Y.J. Ryu
“Rheological weakening of orthopyroxene and the impacts on asthenosphere rheology and the Lehmann seismic discontinuity”

11:45  J. Buchen, H. Marquardt, K. Schulze, S. Speziale, A. Kurnosov, A. Chaudhari, T. Boffa Ballaran and N. Nishiyama
“High-pressure elasticity of polycrystalline stishovite and seismic scattering in Earth's lower mantle”

12:00  F. Bejina, M. Bystricky, N. Tercé, M. Whitaker and H. Chen
“Bulk modulus of Fe-rich olivines”
“The effect of water and oxygen fugacity on seismic properties of olivine”

“Acoustic velocities across the olivine-wadsleyite-ringwoodite transitions and the seismic signature of the 410 km mantle discontinuity”

12:45  **LUNCH BREAK**

**Session: Deformation of Minerals**  – Room A109 –

09:30  **B. Bonechi**, V. Stagno, Y. Kono, L. Ziberna, C. Perinelli and M. Gaeta  
“Rheology of primitive alkaline basalts: constraints on the pre-eruptive system of Campi Flegrei (Naples, Italy)”

09:45  **O. Chevrel**  
“Measuring the viscosity of lava: an experimental approach in the field”

10:00  **F. Ferreira** and K. Marquardt  
“Transmission of dislocations across olivine grain boundaries”

10:15  **M. Thieme**, S. Demouchy, D. Mainprice, F. Barou and P. Cordier  
“Stress evolution and associated microstructure during transient creep of olivine at 1000-1200 °C”

10:30  **COFFEE BREAK**

**Session: Fluids and Ore Processes**  – Room A109 –

11:15  **E. Cannao**, M. Tiepolo, G. Borghini, P. Fumagalli and A. Langone  
“Looking for potential fluid-mobile elements reservoirs in the lithosphere: preliminary results from experimental studies”

11:30  **C. Ferraina**, G. Iacono-Marziano, F. Gaillard and S. Sizaret  
“Experiments and modeling of metal partitioning between sulfide and silicate liquids suitable for the formation of magmatic sulfide ore deposits”

11:45  **E. Bazarkina**, A.V. Zotov, D. Chareev and L. Truche  
“Reduced sulfur control on cadmium mobility in natural and industrial aqueous environments”
12:00  **V. Potapkin**, A. Loges, M. Wilke, D. Testemale and S. Klemme
“Unraveling the formation of economic tungsten deposits in the Earth’s crust in hydrous fluids: Solubility of scheelite (CaWO$_4$) in supercritical fluids in the system H-O-Cl-F”

“X-ray absorption spectroscopy study of the chemistry of As and Au in arsenian pyrites”

12:30  **LUNCH BREAK**
Session: Geophysical Properties - Electrical conductivity – Amphi A002 –

14:00  **D. Freitas**, G. Manthilake, F. Schiavi, J. Chantel, N. Bolfan-Casanova, M.A. Bouhifd and D. Andrault
“Experimental evidence supporting global melt layer at the base of the Earth's upper mantle”

14:15  **F. Gaillard**, M. Laumonier, D. Sifré and J. Chen
“The electrical conductivity of the Earth’s interior deciphered by laboratory measurements on volatile-bearing melts”

14:30  **H. Liu**, Q. Zhu and X. Yang
“Geophysically resolved electrical structure may not be used to map water content in the shallow mantle”

“Electrical conductivity of Fe-S alloys at high pressure and high temperature: Implications for Mercury’s weak and long-lived magnetic field”

15:00  **E. Gardes**, M. Laumonier, F. Gaillard, G. Manthilake and D. Laporte
“Combined bulk and nano-scale investigations of low melt fractions in upper mantle rocks”

15:15  **H. Fei**, D. Druzhbin and T. Katsura
“Ionic conductivity of natural olivine”

“Development of in situ techniques for the quantification of volcanic processes”

15:45  **POSTER SESSION**  – Room A102 – A103 –
Session: Kinetics – Salle A109 –

14:00  **B. Reynard**, J. Jonfal, H. Pilorgé, A.C. Ganzhorn
“Raman imaging D/H diffusion in experiments”

14:15  **Z.W. Li**, F. Costa, S. Chakraborty and K. Nagashima
“A new experimental study on multicomponent diffusion of F, Cl and OH in apatite and implications for magma ascent rate determinations”

14:30  **B. Joachim**, W. Heinrich, C. Höschen and R. Abart
“The effect of H2O on relative component mobilities and microstructure development in metamorphic reaction rims”

14:45  **S. Chakraborty**, R. Dohmen, J. Polednia and M. Wiedenbeck
“Concentration-dependent diffusion of trace elements in olivine”

15:00  **C. Beyer**, R. Dohmen, S. Chakraborty, D. Rogalla, H.W. Becker and U. Hegemann
“Lead diffusion in CaTiO3: A combined study using Rutherford Backscattering and ToF-SIMS”

“Experimentally determined grain growth kinetics of spinel peridotite and the implications for emplacement of mantle xenoliths”

15:30  **A.C. Ganzhorn**, H. Pilorgé and B. Reynard
“Using tracer diffusion experiments to highlight rock-mineral interactions and rock permeabilities at high pressure”

15:45  **POSTER SESSION – Room A102 – A103 –**
Tuesday June, 19

**Plenary Lecture – Amphi A002 –**

09:00 **M. Roskosz**
“Isotope tracers of core formation: Toward an experimental calibration of non-traditional stable isotope systems”

**Session: Mineral Physics – Room A109 –**

09:45 **T. Komabayashi**, G. Pesce, G. Morard, D. Antonangeli, R. Sinmyo and M. Mezouar
“Phase transition boundary between fcc and hcp structures in Fe-Si alloy and its implications for thermodynamics of silicon-bearing Earth’s core”

10:00 **H. Breton**, T. Komabayashi, S. Thompson, N. Potts and S. Anzellini
“Phase relations of Fe₄N at high pressure and temperature determined in a laser-heated diamond anvil cell”

10:15 **D. Vielzeuf**, N. Floquet, J. Perrin, A. Ricolleau and D. Laporte
“Physical properties of synthetic magnesian calcites”

10:30 **COFFEE BREAK**

11:00 **A. San Jose Mendez**, J. Buchen, H. Marquardt and H.P. Liermann
“Time-resolved X-ray diffraction study of the spin crossover of (MgFe)O under dynamic compression”

11:15 **X. Liu**, L. Liu, Q. He, W. Yan, Y. Ma, X. Bao, M. He, R. Tao and R. Zou
“Si distribution in disordered MgAl₂O₄ spinel”

11:30 **I. Kupenko, et al.**
“Magnetic hematite at depths of the Earth’s transition zone”

11:45 **R. Huang**, T. Boffa Ballaran, C. McCammon, N. Miyajima and D.J. Frost
“The speciation of Fe and Al in bridgmanite as a function of composition and oxygen fugacity”

12:00 **G. Aprilis, et al.**
“Chemical interaction of iron with diamond anvils in pulsed and continuous wave laser heated diamond anvil cells”

12:15 **A. Rosenthal** and W.A. Crichton
“Density changes in hydrous oceanic crust subducted to the Earth’s transition zone obtained by in situ X-ray diffraction”
Session: Early Earth (1) – Amphi A002 –

09:45  **V. Malavergne**, H. Bureau, C. Raepsaet, F. Gaillard, M. Ponct, S. Surblé, D. Sifré, S. Shcheka, C. Fourdrin, D. Deldicque and H. Khodja
“The linked fate of H and C during planetary core mantle differentiation”

10:00  **C. Fichtner**, M.W. Schmidt, C. Liebske, A.S. Bouvier and L. Baumgartner
“Carbon partitioning between metal and silicate melts? Implications for the origin and inventory of Earth’s carbon”

10:15  **J. Wade** and B.J. Wood
“Evidence for Carbon-rich cores in asteroids and terrestrial planets”

10:30  **COFFEE BREAK**

11:00  **C. Cartier**, O. Namur and B. Charlier
“Ti as Mercury’s core formation tracer: evidence for negligible FeS layer”

11:15  **S. Hackler**, D. Loroch, A. Rohrbach, S. Klemme and J. Berndt
“Chalcophile element partitioning between sulfide and silicate melts”

11:30  **A. Boujibar**, Y. Fei, K. Righter, E. Bullock and Z. Du
“Segregation of alkali metals Na, Rb and Cs with sulfides into planetary cores: implications for volatile depletion in planetary mantles”

11:45  **J. Guignard**, M.J. Toplis, M. Monnereau and G. Quitté
“Metal-silicate segregation in early-accreted bodies of the Solar System: insights from interfacial energies, connectivity and 3D microtomography”

12:00  **N. Kueter**, M.W. Schmidt, M.D. Lilley and S.M. Bernasconi
“Kinetic isotope fractionation effects during carbon-precipitation from a CH4-rich, progressively oxidizing COH-fluid”

“Rare Earth Elements behavior under reducing conditions, implications in the sulfide/liquid and enstatite/liquid partitioning within Enstatite Chondrites”

12:30  **LUNCH BREAK**
Session: Early Earth (2) – Room A109 –

14:00  **B.J. Wood** and A. Matzen  
“Halogen volatility in the early solar system”

14:15  **C. Liebske** and A. Khan  
“On the origin of Mars”

14:30  **G. Kraettli** and M.W. Schmidt  
“Simulation of a fully fractional crystallization of the Moon: a lunar liquid line of descent”

14:45  **B. Charlier**, T.L. Grove, O. Namur and F. Holtz  
“Crystallization of the lunar magma ocean and the primordial mantle-crust differentiation of the Moon”

15:00  **A. Neri**, J. Guignard, M.J. Toplis, M. Monnereau and G. Quitté  
“Metal-silicate segregation in early-accreted bodies of the Solar System: insights from interfacial energies, connectivity and 3D microtomography”

15:30  **POSTER SESSION**  – Room A102 – A103 –

Session: Redox  – Amphi A002 –

14:00  **W. Pischel**, S.L. Webb and B.C. Schmidt  
“The effect of redox on the viscosity of halogen-bearing basaltic melts”

14:15  **J. Leuthold**, J. Blundy and P. Ulmer  
“The role of oxygen fugacity on clinopyroxene: major, minor and REE elements chemistry”

14:30  **D. Smythe**, B.J. Wood and W.M. Nash  
“An experimental study on the effects of melt composition and temperature on sulfur redox state and solubility in silicate melts”

“The oxidation state of the deep Earth: Fe$^{2+}$/Fe$^{3+}$-ratios of high pressure garnets and pyroxenes”

15:00  **KEYNOTE**  
**C. Dalou**, E. Füri, M.C. Caumon and M. Laumonier  
“Determination of $^{15}$N/$^{14}$N ratios in reduced silicate glasses using Raman spectroscopy”

15:30  **POSTER SESSION**  – Salle A102 – A103 –
Wednesday June, 20

Session: Volatiles in NAMs and Melts – Room A109 –

09:00  **K. Litasov** and A. Shatskiy
“Carbon-bearing magmas in the Earth’s deep interior”

09:15  **J. Hermann**, S. Lakey and J.A. Padrón-Navarta
“Water transport in subduction zone peridotites beyond the stability of chlorite”

09:30  **A. Potrafke**, R. Stalder and B.C. Schmidt
“OH-defect incorporation in quartz in granitic systems at 1 - 5 kbar”

09:45  **J.A. Padrón-Navarta** and J. Hermann
“Experimental determination of the hydrogen storage capacity of olivine in the subducting slab and the mantle wedge”

10:00  **L. Martinek** and N. Bolfan-Casanova
“Water quantification by Raman spectroscopy: quantitative approach on dispersion and uncertainties: Cases of olivine and wadsleyite”

10:15  **T. Yoshioka**, M. Wiedenbeck, S. Shcheka and H. Keppler
“Nitrogen solubility in the deep mantle and the origin of nitrogen on Earth”

10:30  **T.M. Busche**, S.L. Webb, B.C. Schmidt and K.S. Techmer
“The effect of P₂O₅ on unmixing of basaltic melts”

10:45  **COFFEE BREAK**

“Volatile exchange coefficients between apatite and silicate melt; new data for carbon”

11:30  **M. Rondet**, B. Scaillet, M. Pichavant and I. Di Carlo
“Experimental study of Halogens partitioning between apatite, fluid and silicate melts”

11:45  **F. Cafagna**, M.W. Schmidt and S. Tumiati
“The high pressure solubility of CO₂ and H₂O in granitic melts: an experimental study with centrifuging piston-cylinder”

12:00  **M. Schanofski**, S. Fanara and B.C. Schmidt
“Experimental determination of H₂O and CO₂ solubilities in ultrapotassic melts”
12:15  **Y. Morizet**, N. Trcera, C. Larre, E. Le Menn, D. Vantelon and F. Gaillard  
“X-ray Absorption Spectroscopic investigation of the Ca and Mg environments in CO₂-bearing silicate glasses”

“Sulfur Solubility in Silico-Carbonate Melts at High Pressures”

12:45  **LUNCH BREAK**

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**Session: Phase Equilibria Metamorphism  – Amphi A002 –**

09:00  **F. Ridolfi**, F. Holtz, R.R. Almeev, C. Zhang, D. Qi, A.M. Currin Sala, R. Balzer and S. Linsler  
“Refinement and Application of Calcic Amphibole Thermobarometry for Volcanic Rocks”

09:15  **C. Soder**, M. Burchard, T. Ludwig and J. Grimm  
“Melting of felsic crust at mantle depth: implications for orogenic ultrapotassic magmatism”

09:30  **E. Becerra-Torres**, J. Blundy, E. Melekhova and R. Brooker  
“Experimental phase equilibria of primitive high-K magmas from the Colima Graben, Mexico”

09:45  **J. Andujar**, M. Jimenez-Mejias, B. Scaillet, M. Pichavan¹, I. Di Carlo and M.J. Blanco  
“Tracking the evolution of basalt to phonolite magmas at Tenerife: an experimental approach”

10:00  **S. Fanara** and B.C. Schmidt  
“Phase equilibria experiments on a leucite from the Colli Albani volcanic district (Italy)”

10:15  **KEYNOTE**  
**E. Melekhova**  
“The origin of high-Ca plagioclase: Combining experiments, natural observations and phase petrology”

10:45  **COFFEE BREAK**
Session: Early Earth (3) – Amphi A002 –

11:15  **K. Burton**, A.J. McCoy-West, A. Wohlers, B.J. Wood
“The partitioning of molybdenum stable isotopes into sulfide and the potential effects of core formation”

11:30  **I. Blanchard**, S.A. Jacobson and D.C. Rubie
“Behaviour of sulfur during core-mantle differentiation of the Earth”

11:45  **I. Speelmanns**, M.W. Schmidt and C. Liebske
“The behaviour of Nitrogen during Earth’s accretion and core-mantle differentiation”

12:00  **S. Thompson**, T. Komabayashi, H. Breton, S. Suehiro and Y. Ohishi
“Thermal equation of state of solid Fe$_3$S and its implications for Earth’s core”

12:15  **B. Luais**, B.J. Wood and C.A. Norris
“Experimental investigation of Germanium isotopic fractionation during evaporation processes”

12:30  **D. Huang** and J. Badro
“Fe-Ni Ideality during Earth’s Core Formation”

12:45  LUNCH BREAK

Session: Element Partitioning – Room A109 –

“Rare Earth Elements fractionation in alkaline magma: an experimental approach”

“The impact of sulfur on the transfer of platinoids by geological fluids”

14:45  **J. Blundy**, E. Melekhova, P. Ulmer, M. Pichavant, M. Humphreys, L. Ziberna, V. Cerantola, R. Brooker and C. McCammon
“Iron redox equilibria in hydrous basaltic melts and Fe$^{2+}$-Mg exchange between olivine and melt”

15:00  **T. Shchekina**, A.A. Rusak, Y.O. Alferyeva, E.N. Gramenitskiy, A.R. Kotelnikov, N.G. Zinovieva and A.Y. Bychkov
“Influence of pressure on distribution of rare earth elements between silicate and salt melts in the granite system with the maximum fluorine concentration”
15:15  **O. Sigmarsson**
“Radium partition coefficients during basalt fractionation at Mt. Hekla comparison of empirical and experimental approaches”

15:30  **A. Villaros**, M. Pichavant and J. Michaud
“Experimental melting of ortho- and paragneiss under fluid-present conditions: melt compositions (major and trace elements) and implications for granite genesis”

15:45  **POSTER SESSION  – Salle A102 – A103 –**
Session: Fluids – Diamonds – Amphi A002 –

14:15  **V. Matjuschkin**, A.B. Woodland and G.M. Yaxley
“Methane-bearing fluids in the upper mantle: an experimental approach”

14:30  **G. Rustioni**, A. Audetat and H. Keppler
“Experimental constraints on trace element mobility in subduction zone fluids”

14:45  **M. Pichavant** and C. Fauguerolles
“Linking H₂ concentration and redox state (fH₂ and fO₂) in H₂O-H₂-NaCl fluids”

15:00  **Y. Litvin**
“Fate of natural diamonds: from crystallization to dissolution (as evidenced by experiments)”

15:15  **KEYNOTE**
**S. Tumiati**, C Tiraboschi and S. Poli
“An experimental model for the fluid-rock interaction at the slab-mantle interface: measured composition of subduction-related fluids in the presence of graphite/organic carbon, carbonates and silicates”

15:45  **POSTER SESSION**  – Salle A102 – A103 –
Session: Deformation of Minerals

“Plastic deformation of aluminous stishovite and implications for mantle heterogeneities”

P02: C. Sanchez-Valle, C. Plückthun, I. Kupenko, A.D. Rosa, S. Petitgirard, W. Crichton and S. Merkel
“Shear anisotropy in textured carbonates and the detection of carbonated regions in subducting slabs”

“Viscosity of carbonated melts: the effect of volatiles (CO₂, H₂O) at HP and HT”

P04: J. Michaud, M. Pichavant and A. Villaros
“Textures and microtextures of low degree crustal melts”

P05: N. Mansard, H. Stünitz, H. Raimbourg and J. Précigout
“Experimental investigation of strain localization in two-phase plagioclase-orthopyroxene assemblages”

P06: J. Précigout, H. Stünitz and J. Villeneuve
“Water pumping induced by shear localization during high-pressure experiment”

P07: L. Arbaret, M. Laumonier, L. Jolivet, A. Rabillard and R. Champallier
“Late magmatic transfers and strain localization under high shear stresses: Insight from HP-HT experiments”

Session: Geophysical Properties

“Rapid segregation of carbonate melts from subducting slabs”

P09: T. Hammouda, G. Manthilake, A. Schubnel, Y. Wang, T. Yu, J. Gasc, J. Chantel and Z. Jing
“Carbonatite breakdown and acoustic emissions”
P10: **J. Chantel**, Z. Jing, M. Xu, T. Yu and Y. Wang

“Pressure dependence of the liquidus and solidus temperatures in the Fe-P binary system determined by in-situ ultrasonics: Implications to the solidification of Fe-P liquids in planetary cores”


“Project PLANEX: X-ray in-situ diagnostics of materials under High Pressure and High Temperature (HP-HT)”


“High pressure- high temperature PLANEXs platform for in situ Raman and IR spectroscopy studies”

P13: B. Gibert, **F. Parat**, F. Nono, D. Loggia and N. Marino

“Effect of temperature and pore fluid on the electrical conductivity of basaltic rocks up to supercritical conditions”

P14: **B. Gibert**, M. Eckes, D. De Sousa Meneses, P. Echegut and P. Veber

“Heat transport by radiation in San Carlos olivine from high temperature infrared emittance spectroscopy”


“Toward 4D X-ray imaging under extremes conditions”


“In situ XAS-HERFD experimental study of zinc transport by hydrothermal fluids”

**Session: Mantle Melting**

P17: **A. Matzen** and B.J. Wood

“Peridotite melting and the effect of pressure on Ni partitioning between olivine and silicate liquid”

P18: **D. Ionov**

“Melt extraction, metasomatism and “refertilization” in the evolution of continental mantle”

P19: **P. Condamine** and D.J. Frost

“Generation of K-rich magmas in the metasomatised upper mantle”


“The influence of potassium on the carbon-carbonate equilibrium and the melting of harzburgitic mantle”
P21: **J.C. Storck**, P. Brack and P. Ulmer
“Fractionation experiments of primitive shoshonitic magmas at 8 kbar”

P22: **F. Marxer** and P. Ulmer
“Polybaric Fractional Crystallisation of Arc Magmas - An Experimental Study”

P23: **J. Fleming** and J. Leuthold
“Trace Element Partitioning in Fractionating Mid Ocean Ridge Basalts”

**Session: Kinetics**

P24: **A. Mourey** and T. Shea
“2D and 3D quantification of olivine growth rates in a Hawaiian basalt: an experimental approach”

P25: **T. Shea** and A. Mourey
“Mechanisms for the development of phosphorus and aluminum zoning in olivine: lessons from crystallization experiments”

P26: **N. Malz** and K. Faak
“Quantifying cooling rates in magmatic systems ? application of the Mg-in-plagioclase and Ca-in-olivine diffusion chronometers on the Skaergaard intrusion”

P27: **K.T. Koga**, M. Rouleau and J.M. Brenan
“Grain boundary diffusion of Re, Os, Pt, and Pb, in olivine aggregate in presence of sulfide”

P28: **R. Delon**, S. Demouchy, Y. Marrocchi and M.A. Bouhifd
“Argon incorporation and diffusion in polycrystalline olivine”

P29: A. Grand’Homme, E. Janots, **A.M. Seydoux-Guillaume**, D. Guillaume, V. Bosse, V. Magnin, J. Hövelmann, C. Höschel and M.C. Boiron
“Nanoscale evidence of partial resetting of the U-Th-Pb systems in monazite due to anisotropic and incomplete replacement”

“Rapid growth of plagioclase: implications for conduit processes in basaltic Plinian eruptions”

P31: **A. Allabar** and M. Nowak
“Bubble shrinkage in experimentally decompressed Vesuvius melt”

P32: **K. Devineau**, R. Champallier and M. Pichavant
“Experimental evidence for H₂O-rich boundary-layers during the crystallization of pegmatites”
Tuesday 19, June

Session: Mineral Physics

P01: A. Friedrich, M. Koch-Müller, I. Efthimiopoulos and W. Morgenroth
“The pressure-induced HS to LS transition of octahedrally coordinated Mn$^{3+}$ in the hydrogarnet henritermierite, Ca$_3$Mn$_2$[SiO$_4$]$_3$[O$_4$H$_4$]$_x$”

P02: S. Merkel, C. Langrand, V. Svitlyk, G. Garbarino, A. Rosa, N. Hilairet and J. Chantel
“Investigations of high pressure transformation microstructures using multigrain crystallography”

P03: A. Yoshiasa, O. Ohtaka, A. Nakatsuka, H. Arima and K. Sugiyama
“Precursor phenomenon in phase transition from tetragonal to cubic phases in ZrO$_2$, HfO$_2$, BaTiO$_3$ and PbTiO$_3$”

P04: H. Terasaki, S. Kamada, Y. Takubo, N. Hirao, S.I. Kawaguchi and A. Machida
“Densities of metals at high pressure using X-ray absorption method with diamond anvil cell”

P05: N. Satta, H. Marquardt, A. Kurnosov, T. Boffa-Ballaran, J. Buchen, C. McCammon and T. Kawazoe
“Single-crystal elasticity of iron-rich phase E”

P06: L. Uenver-thiele, A.B. Woodland, N. Miyajima, T. Boffa Ballaran and D.J. Frost
“Phase relations between (Mg,Fe)$_2$Fe$_2$O$_5$ and Mg-Fe silicates like garnet and phase B”

P07: T. Boffa Ballaran, K. Schulze, M.G. Pamato, A. Kurnosov, K. Glazyrin, H. Marquardt and A. Pakhomova
“High-pressure single-crystal structural analysis of AlSiO$_3$OH Phase Egg”

Session: Early Earth

P08: B. Qaddah, J. Monteux, M. Le Bars, V. Clesi and M.A. Bouhifd
“The breakup of liquid iron diapirs within the magma ocean”

P09: O. Namur, B. Charlier and C. Cartier
“Carbon solubility in silicate under reducing conditions and the Implications for Mercury”

“Partitioning of siderophile but volatile elements during late stages of core formation”

P11: E. Kubik, F. Moynier and J. Siebert
“Tracing Earth’s volatile delivery with tin”

P12: K. Kiseeva, Y. Xia, F. Huang and J. Wade
“Experimental study of Zn and Cu isotope fractionation: implications for the lunar core composition”
P13: **T. Grutzner**, S. Klemme and A. Rohrbach
“Experimental determination of stable Ru and S isotope fractionation between liquid metal and liquid silicate”

P14: **P. Faure**, M.A. Bouhifd, M. Boyet and G. Manthilake
“Behaviour of lithophile trace elements during the Earth’s core formation”

P15: **A. Matzen** and B.J. Wood
“Halogen volatility from silicate melts”

“Low hydrogen contents in the cores of terrestrial planets”

P17: **J. Monteux**, D. Andrault and H. Samuel
“On the cooling of a deep mushy mantle”

“Stability of carbon and sulfur-rich metals in the deep Earth's mantle”

“Helium in the Earth's core”

Session: Redox

“Variations in Fe$^{2+}$/Fe$^{3+}$ ratios in sediment-derived silicic melts at sub-arc depths”

“Ti K-edge XANES study on pyroxene, olivine, Fe-Ti oxides and basaltic glasses under lunar conditions of oxygen fugacity”

P22: **D. Andrault**, M. Muñoz, G. Pesce, V. Cerantola, A. Chumakov, I. Kantor, S. Pascarelli, R. Rüffer and L. Hennet
“Large oxygen excess in the primitive mantle could be the source of the Great Oxygenation Event”

P23: **A. Alice** and Z. Zajacz
“Control of oxygen fugacity in rapid-quench molybdenum-Hafnium carbide pressure vessel assemblies: Method and verification”

P24: **N. Miyajima**, R. Huang, F. Sorbadère, T. Boffa Ballaran, C. McCammon and D.J. Frost
“Quantitative determination of iron oxidation states in minerals using electron energy-loss near-edge structure spectroscopy: a geochemical application of Fe L2,3-edge ELNES revisited”
Session: Experimental Geochemistry

P25:  **M. Kokh**, N. Assayag, P. Cartigny and G.S. Pokrovski
      “The effect of trisulfur radical ion on sulfur isotope fractionation in hydrothermal systems”

P26:  **H. Guo**, Y. Xia and F. Huang
      “Experimental calibrations on Cu isotope fractionation between magmatic-hydrothermal fluid and silicate magma”

      “Equilibrium fractionation of chromium isotopes between chromites and silicate melts”

P28:  **K.B. Prissel**, M.J. Krawczynski, N. Dauphas and N.X. Nie
      “Evaporative Iron Loss During One-Atmosphere Gas-Mixing Experiments”

P29:  **P. Petschnig**, N. Kueter, S. Bernasconi, M. Lilley and M.W. Schmidt
      “Carbon Isotope Fractionation between CO2 and Carbonate Melt”

      “The interior structure of Mars: New constraints from experiments and thermodynamic modelling”

      “Stable isotope fractionation during degassing of silicate melts”
**Wednesday 20, June**

**Session: Volatiles in Minerals and Melts**

**P01:** [S. Demouchy](#), S. Shcheka, C.M.M. Denis and C. Thoraval
“Hydrogen partitioning between NAMs in garnet-bearing peridotite at subsolidus conditions”

**P02:** [N. Bolfan-Casanova](#), F. Schiavi, D. Novella, H. Bureau, C. Raepsaet, H. Khodja and S. Demouchy
“Water incorporation in transition zone minerals, Wadsleyite and Ringwoodite: a study using ERDA (Elastic Recoil Detection Analysis)”

**P03:** [R. Stalder](#), C. Frigo and T. Ludwig
“Coesite and stishovite as carrier of OH and other light elements during ultra high-pressure metamorphism of continental crust”

**P04:** [S. Flemetakis](#), S. Klemme, A. Rohrbach and J. Berndt
“Experimental halogen partitioning between mantle minerals and silicate melts: Implications for the melting of a metasomatized mantle source”

**P05:** [Y. Moussallam](#), P. Florian, D. Corradini, Y. Morizet, N. Sator, R. Vuilleumier, B. Guillot and F. Gaillard
“Volatile solubility and molecular structure of kimberlite melts”

**P06:** [M.G.J. Massuyeau](#), S. Tappe and F. Vilijoen
“A thermodynamic model with CO₂ and H₂O for the lithosphere-asthenosphere boundary beneath thick continental roots”

**P07:** [S. Jégo](#), F. Gaillard, G. Iacono-Marziano and Y. Morizet
“Experimental determination of the pressure dependence of sulfur speciation in silicate melts”

**P08:** [C. Larre](#), Y. Morizet, P. Navaro and N. Mangold
“Water solubility in a martian basaltic melt at high pressures (0.5 - 1.5 GPa)”

**P09:** [R. Spallanzani](#), A. Di Muro and S. Moune
“The signature of syn-eruptive gas emissions at Piton de la Fournaise volcano (La Réunion island) during 2014-2015 activity”

**P10:** [M. Wilke](#), S. Petitgirard, C. Sahle, C. Weis, K. Gilmore, G. Spiekermann, J.S. Tse, C. Cavallari, V. Cerantola and C. Sternemann
“Properties of magmas at depth from SiO₂ local structure measured using X-ray Raman spectroscopy”

**P11:** [M. Clement](#), J.A. Padron-Navarta, S. Demouchy and A. Tommasi
“Oriented growth of metamorphic olivine under disequilibrium drained conditions”

**P12:** [A. Allabar](#) and M. Nowak
“Spinodal decomposition of hydrous Vesuvius melt triggering explosive volcanism”
“Experimental determination of H2O solubility in basalt at upper mantle conditions”

Session: Melt Inclusions

“Temporal Evolution of Proto-Izu-Bonin-Mariana Arc Volcanism: Constraints from Statistical Analysis of Melt Inclusion Composition”

P15: D. Narvaez, E. Koga, P. Samaniego and K.T. Koga
“Study of primitive olivine-hosted melt inclusions from the Ecuadorian arc”

P16: M. Laubier, M. Gaborieau, N. Bolfan-Casanova and J. Maurice
“On the use of experimentally derived redox sensors in olivine-hosted melt inclusions”

P17: M. Laumonier, D. Laporte, P. Schiano and A. Provost
“Dissolution-precipitation of forsterite phenocrysts in a thermal gradient and melt inclusion formation”

P18: M. Gaborieau, M. Laubier and N. Bolfan-Casanova
“Iron isotopic fractionation in olivine-hosted melt inclusions as an indicator of mantle oxygen fugacity”

P19: F. Schiavi, A. Gómez-Ulla, S. Venugopal, M. Hardiagon, N. Bolfan-Casanova and D. Laporte
“Assessing the initial volatile content of melt inclusions by 3D Raman imaging of hosted bubbles”

P20: S. Venugopal, F. Schiavi, N. Bolfan-Casanova and S. Moune
“The behaviour of C- and S- bearing species in shrinkage bubbles before and after melt inclusion homogenisation: insight from Raman spectroscopy”

P21: B. Welsch and F. Faure
“Clinopyroxene dissolution: A melt inclusion study”

“Storage and degassing conditions of monogenetic eruptions at Tenerife (Canary Islands, Spain): Constraints from melt inclusions and phase equilibrium experiments”

P23: F. Faure, L. Tissandier, L. Florentin and K. Devineau
“Protoplanet compositions recorded by glass inclusions hosted in porphyritic magnesian olivines in chondrules: an experimental study”

“Geochemistry of olivine-hosted melt inclusions of the ~ 7 ky basanitic Montcineyre eruption, Massif Central, France”
**Session: Fluids**

“Melting relations of multicomponent diamond-forming MgO-FeO-SiO_2-(Na, Ca, K)CO_3 system of the Earth’s transition zone (experiments at 20 GPa)”

P26: **C. Martel**, J. Andújar, P. Mothes, B. Scaillet, M. Pichavant and I. Molina
“Storage conditions of the mafic and silicic magmas at Cotopaxi, Ecuador”

P27: **J.C. Storck**, P. Brack and P. Ulmer
“Fractionation experiments of primitive shoshonitic magmas at 8 kbar”

“Implication of water phase condition on the K-, Nitrogen, Ca- and La-smectite-muscovite transition under high pressure and application for subduction processes”

“In situ quantification of the sulfur radical species (S³⁻, S²⁻) in aqueous fluids and silicate melts using a hydrothermal diamond-anvil cell (HDAC)”

P30: **C. Springsklee**, C. Sanchez-Valle, C. Plückthun and D. Testemalle
“Tin mobilization and transport in magmatic-hydrothermal fluids and the formation of Sn(-W) deposits in the Earth’s crust”

P31: **J. Stefanski** and S. Jahn
“Yttrium speciation in aqueous brines under subduction zone conditions: Ab-initio molecular dynamics simulation and free energy exploration”

“Experimental Investigation of the Interaction of Saline Fluids with the Lithospheric Mantle”

“Growth and Dissolution of Diamonds in the Lithosphere”

P34: **R. Thierry** and L. Mercury
“Local and global thermodynamic analysis of hydromagmatism”

P35: **J. Boulliung**, E. Füri, C. Dalou, Y. Marrocchi, L. Tissandier and M.-C. Caumon
“Nitrogen solubility and speciation in silicate melts”
Session: Phase Equilibria - Metamorphism

P36: **C. Chelle-Michou** and J. Blundy  
“Towards a new biotite-based barometer for metaluminous granitoids”

P37: **R. Champallier**, C. Martel and J.L. Bourdier  
“Experimental determination of the storage conditions and fractionation path of the Pavin trachyandesite (Massif Central, France)”

P38: **P. Hu**, Y. Wu and Y. Liang  
“Zircon U-Pb dating and tectonic implication of the Erlangping back-arc unit in the Qinling orogen, central China”

P39: **C. Nicollet**, D. Vielzeuf, R. Savoye and V. Bosse  
“Experimental study of the Ultra High T metamorphism of a restitic metapelitic granulite: role of a previous partial melting event on the UHT metamorphism and influence of the redox state”

P40: **M. Guitreau**, J.L. Paquette and A.M. Gannoun  
“The non-trivial U-Pb and Lu-Hf isotope systematics of ancient zircons from the Napier Complex (Antarctica)”

P41: **E. Bruand**, T. Hammouda, O. Laurent, C. Storey, M. Fowler and E. Heilimo  
“Apatite and titanite as a proxy of magma evolution? What is experimental work telling us?”

“The stability of hydrous phases beyond antigorite breakdown for a magnetite-bearing natural serpentinite between 6.5 and 11 GPa”

P43: **N.S. Gorbachev**, A.V. Kostyuk, P.N. Gorbachev and D.M. Sultanov  
“The phase composition and critical relation in the eclogite-CaCO₃+Na₂CO₃+K₂CO₃+H₂O system at P=4 GPa, T=1100-1300°C (experimental data)”

“Why natural monazite never becomes amorphous: experimental evidence for alpha self-healing”

“Effects of crystallization time on trace elements partitioning between alkali feldspars and trachytic melts”

P46: **L.A. Fischer**, A. Spijkerboer, O. Namur, B. Charlier and F. Holtz  
“Effect of starting material and temperature path on phase equilibria”

P47: **Y. Zhang**, C. Wang and Z. Jin  
“High-pressure phase transitions of natural chromitite from the Tibetan ophiolite”