## Symposium AI01 Room G5

### Contributions of Industrial Geosciences to Fundamental Understanding and Vice Versa: Building Materials

**Convenor: Bruno Messiga**

Session chaired by Bruno Messiga

*08:30* Natural Building Stones: Fabric Induced Anisotropy and its Influence on Mechanical Properties: **Strohmeyer D & Siegesmund S** (AI01:MOam01:G5).

*08:45* Control of Marble Disintegration by Fabric Properties and Thermal Dilatation: **Ruedrich J, Weiss T, Tschegg E & Siegesmund S** (AI01:MOam02:G5).

*09:00* Frost Action on two Types of Sandstone Used in Alsatian Monument Building: **Thomachot C & Jeannette D** (AI01:MOam03:G5).

*09:15* Calcite Crystals as Mortar Aggregate in Northern Italy: **Bugini R & Folli L** (AI01:MOam04:G5).

*09:30* Thin Section Analysis of Ancient Plaster and Mortar: **Laue S** (AI01:MOam05:G5).

*09:45* Technical Handling and Control of the Transformation of Anhydrite to Gypsum : **Schwotzer M, Scheiber J, Schweike U, Weidler PG & Nueesch R** (AI01:MOam06:G5).

*10:00* *BREAK*

Session chaired by Siegfried Siegesmund

*10:30* Models and Geomechanical Properties of Dense Grain Packings: **Hecht CA** (AI01:MOam09:G5).

*10:45* Characterisation of the Solvus Brownmillerite-Perovskite in the $CaAl_{0.5}Fe_{0.5}O_{2.5}$-$CaTiO_3$ System: **Ingrin J, Blanchard M & Touzo B** (AI01:MOam10:G5).

*11:00* Glass Ceramic Manufacts Belonging to $ZnO$-$Al_2O_3$-$SiO_2$ System: Study of Bulk Nucleation and Crystal Growth. Chemical Physical Characterization for Industrial Applications: **Baldi G, Barzanti A & Faso V** (AI01:MOam11:G5).

*11:15* Chromian-Rich Phases in the System $MgO$-$Al_2O_3$-$SiO_2$-$Cr_2O_3$ and their Relevance on Chromium Inertization in Ceramic Refractories: **Brigida C, Valle M & Poli S** (AI01:MOam12:G5).

*11:30* The Join $CaO$-$Al_4(Si_4O_{10})(OH)_8$ (Kaolinite): An Experimental Study between 1100-1300 °C: **Capasso F, Messiga B, Riccardi MP & Anselmi Tamburini U** (AI01:MOam13:G5).

*11:45* Incorporation in Ceramic Pastes Utilized in the Manufacture of Utilitarian and Decorative Ware of Slurries Produced during the Processing of Aggregates from Volcanic Rocks: **Silva J, Gomes C, Naudin JN & Bobos I** (AI01:MOam14:G5).

## Symposium AI03 Room F1

### Waste Solutions: Environmental Questions, Environmental Answers

**Convenor: Jeremy Joseph & Katrin Wendt-Potthoff**

Session chaired by Katrin Wendt-Potthoff

*08:30 KEYNOTE* Weathering of Slag Materials: **Rammlmair D** (AI03:MOam01:F1).

*09:00 KEYNOTE* Stability of Mineralogical Assemblages in Municipal Solid Waste Incinerator (MSWI) Bottom Ash: An Experimental Study: **Delville N, Montel J & Boivin P** (AI03:MOam03:F1).

*09:30* Thermodynamic Stability of Waste Glasses: **Perret D, Crovisier J, Stille P, Shields G, Mäder U, Advocat T, Schenk K & Chardonnens M** (AI03:MOam05:F1).

*09:45* *BREAK*

Session chaired by Max Coleman

*10:15* The Langoya Gypsum Landfill and its Suitability to Store Inorganic Waste: **Jahren J, Aagaard P, Olsen WM, Loeken T & Sverreson T** (AI03:MOam08:F1).

*10:30* Seepage Water from Uranium Mining Dumps in Eastern Thuringia, Germany: A Hydrogeochemical Study: **Geletneky JW, Merten D & Büchel G** (AI03:MOam09:F1).

*10:45* In Situ Stimulation of Microbial Sulfate and Iron Reduction in an Acidic Mining Lake by Addition of Organic Substrate: **Wendt-Potthoff K, Koschorreck M, Frömmichen R, Herzsprung P, Kellner S, Lorke A & Geller W** (AI03:MOam10:F1).

*11:00* Physico-Chemical Controls on Kinetics of Natural Attenuation of BTEX and Chlorinated Solvents: **Atteia O & Franceschi M** (AI03:MOam11:F1).

*11:15* Determination of Chlorine Stable Isotopic Composition in Chlorate and Perchlorate: **Ader M & Coleman M** (AI03:MOam12:F1).

*11:30* Radionuclides as Tracers of Atmospheric Fallout Enrichment Processes in Mountain Soils: **Pourcelot L, Louvat D, Gauthier-Lafaye F, Del Nero M & Stille P** (AI03:MOam13:F1).

## Symposium BG02 Room G1

### Oxygen and Evolution

**Convenor: Martin Brasier & John Lindsay**

Session chaired by Martin Brasier

*08:30 KEYNOTE* Baryte-Rich Sedimentary Fe and Mn Oxide Deposits and the Re-Oxygenation of Neoproterozoic Seawater after "Snowball-Earth": **Bau M, Buehn B, Dulski P & Ohmoto H** (BG02:MOam01:G1).

*09:00 KEYNOTE* Evolution of Oxygen Distribution in Seawater: **Shields G** (BG02:MOam03:G1).

*09:30 KEYNOTE* $CO_2$ Changes- Pacemaker of the Evolution: **Beckmann G, Klopries B, Hämmerle H, Inacker O & Smolka P** (BG02:MOam05:G1).

*10:00* *BREAK*

Session chaired by Martin Brasier

*10:30 KEYNOTE* Numerical Models of Phanerozoic $O_2$ Evolution: Carbon and Sulfur Isotope Records and the Physiological Response of Plants to Varying $O_2/CO_2$ Ratios: **Berner R, Petsch S, Beerling D & Lake J** (BG02:MOam09:G1).

*11:00 KEYNOTE* Biological and Environmental Consequences of Changing Oxygen Levels in the Late Palaeozoic: **Scott AC & Beerling DJ** (BG02:MOam11:G1).

*11:30* Mapping out Microbial Communities using Stable Isotopes in the 2.7 Ga Belingwe Belt, Zimbabwe: **Grassineau NV & Nisbet EG** (BG02:MOam39:G1).BG02:MOam13:G1)

## Symposium CC02 Room G3

### High Latitude Cenozoic-Quaternary Ice Sheets and Climate – Records of their Role in Global Climate Change

**Convenors: Gary Wilson, Ralph Schneider, Andrew Kerr & Ross Powell**

Session chaired by Gary Wilson & Andrew Kerr

*08:30* Sedimentary Facies and Landforms Associated with Valley Glaciers in Svalbard: Evidence for Changing Dynamic and Thermal Regimes: **Hambrey MJ & Glasser NF** (CC02:MOam01:G3).

*08:45* Geophysical Investigations of Ice-Influenced Sedimentation on Arctic Continental Margins: **Dowdeswell J, Kenyon N & O'Cofaigh C** (CC02:MOam02:G3).

*09:00* Two New Mechanisms of Sediment Erosion/Deposition beneath Fast Moving Ice Streams: **Bougamont M & Tulaczyk S** (CC02:MOam03:G3).

*09:15* Carbonate Diagenesis of the Cenozoic Sedimentary Sequence from the CRP-3 Core, Ross Sea, Antarctica: **Aghib FS & Fielding C** (CC02:MOam04:G3).

*09:30* Landscape Evolution of the Convoy Range and Mackay Glacier, Transantarctic Mountains: **Sugden D & Denton G** (CC02:MOam05:G3).

*09:45* The Application of Cosmogenic Exposure Dating to Glacial Deposits of the Last Deglaciation in the Southern Andes of Chile: **Fogwill C, Kubik PW & Phillips B** (CC02:MOam06:G3).

*10:00* New Evidence for Stable Pliocene Climate in Antarctica from In Situ Cosmogenic Noble Gases: **Oberholzer P, Baur H, Denton GH, Lewis AR, Marchant DR, Schaefer JM, Schluechter C, Wieler R & Willenbring JK** (CC02:MOam07:G3).

*10:15* *BREAK*

Session chaired by Gary Wilson & Andrew Kerr

*10:45* Millennial-Scale Climate in the Labrador Sea: Linkages between Atmosphere, Surface-Water, and Deep-Water: **Weber M** (CC02:MOam10:G3).

*11:00* Ice Sheet Response to Moisture Supply and Orbital Forcing from a Late Pliocene Arctic Ocean Record: **Knies J, Matthiessen J, Vogt C & Stein R** (CC02:MOam11:G3).

*11:15* Oligocene and Miocene Antarctic Paleoglacial History from Cape Roberts Cores Compared with Global Proxy Records: **Powell RD, Hambrey MJ, van der Meer JJ & Krissek LA** (CC02:MOam12:G3).

*11:30* Environmental Magnetic Record of Cenozoic Climate Change from the Victoria Land Basin, Ross Sea, Antarctica: **Verosub KL, Sagnotti L, Roberts AP, Florindo F & Wilson GS** (CC02:MOam13:G3).

*11:45* A New High-Resolution Magnetostratigraphy from Eocene-Oligocene Sediments, Maud Rise, Antarctica: **Florindo F & Roberts A** (CC02:MOam14:G3).

(Symposium CC02 Continued in Session MO pm on Page 47)

## Symposium CC05 Room G2

### Glacial-Interglacial Cycles - Records, Models, and Mechanisms

**Convenor: Gideon Henderson**

Session chaired by Augusto Mangini

*08:30* Low Latitude Insolation Forcing of the Indian Monsoon and Global Climate Changes: **Leuschner DC & Sirocko F** (CC05:MOam01:G2).

*08:45* A Tropical Mechanism for Deglaciation: **Rodgers K, Lohmann G, Lorenz S, Schneider R & Henderson G** (CC05:MOam02:G2).

*09:00* The Mid-Pleistocene 41 kyr to 100 kyr Glacial Cycle Transition, and the Source of Asymmetry between Glaciation and Deglaciation Times: **Tziperman E & Gildor H** (CC05:MOam03:G2).

*09:15* High Resolution Comparison of Ocean, Atmosphere and Ice Records over 400,000 Years POP(1): **Shackleton N, Chappellaz J, Grimalt J, Jouzel J, Stocker T & Waelbroeck C** (CC05:MOam04:G2).

*09:30* Towards a Common Orbital Time Scale for Ice Cores and Marine Sediments: **Hoffmann G, Jouzel J, Waelbroeck C & Parrenin F** (CC05:MOam05:G2).

*09:45* *BREAK*

Session chaired by Gideon Henderson

*10:15* Constraints on Temperature and Timing of Gas Changes Across Termination III (240 ky BP) from Argon Isotopes in Trapped Air in the Vostok Ice Core: **Caillon N, Severinghaus J, Jouzel J, Barnola JM & Chappellaz J** (CC05:MOam08:G2).

*10:30* Glacial Intensification of the Deep Circulation in the SW Pacific Ocean over the Last 1.2 Ma: **McCave I, Hall IR, Shackleton NJ, Weedon GP & Harris S** (CC05:MOam09:G2).

*10:45* The Sea of Okhotsk- High Resolution Paleoclimatic Archive and Paleoceanographic View into the N-Pacific: **Nürnberg D, Tiedemann R, Kaiser A, Biebow N & Pedersen U** (CC05:MOam10:G2).

*11:00* High Resolution $(^{231}Pa/^{230}Th)_{xs,0}$ Profiles in the Equatorial Pacific over the Last 85 kyr: **Pichat S, Albarede F, Sims KW, Francois R & McManus JF** (CC05:MOam11:G2).

*11:15* Millennial Scale Variability during the Last Climatic Cycle: Evidences from the Western Subtropical Atlantic Ocean: **Vautravers M, Shackleton N & Bianchi G** (CC05:MOam12:G2).

*11:30* Mineralogical and Geochemical Records of Glacial-Interglacial Cycles in the North Atlantic Ocean over the Last Million Years: **Bout-Roumazeilles V, Vanderaveroet P, Recourt P & Davies G** (CC05:MOam13:G2).

*11:45* Sr- and Nd-Isotopes in Central Arctic Ocean Sediments: Tracers for the Change of Sediment Provenance and Sedimentary Processes in Glacial-Interglacial-Cycles: **Strohmeyer D, Eisenhauer A & Hansen BT** (CC05:MOam14:G2).

## Symposium EVO5 Room F5

### Rapid Changes in Mesozoic Palaeoceanography: Micropalaeontological, Sedimentological and Geochemical Proxies

**Convenors: Joerg Mutterlose, Elisabetta Erba & Helmi Weissert**

Session chaired by Hugh Jenkyns

*08:30* The Recovery of Planktonic Foraminifera after the Early Aptian Oceanic Anoxic Event 1a: Evidence from the Italian Pelagic Sequences: **Premoli Silva I & Verga D** (EVO5:MOam01:F5).

*08:45* Dinoflagellate Cyst Fluctuations in Mid-Cretaceous Flysch Deposits of the Bavarian Area (S-Germany)- Changes in Climatic or/and Oceanographic Circulation Patterns in the Alpine Tethys: **Kirsch K, Wortmann U & Hauck J** (EVO5:MOam02:F5).

*09:00* Stability of Tropical Warmth and Global Carbon Cycle Perturbation in the Mid-Cretaceous Greenhouse: **Wilson PA & Norris D** (EVO5:MOam03:F5).

*09:15* Evidence for a Higher Magnitude of the Carbonate $\delta^{13}C$-Excursion at the Cenomanian-Turonian Boundary from Brachiopod Calcite of North Cantabria: **Voigt S** (EVO5:MOam04:F5).

*09:30* Cyanobacterial $N_2$ Fixation Fuelled Enhanced Production in the Euxinic North Atlantic during the Late Cenomanian Oceanic Anoxic Event: **Kuypers MM, Pancost RD, Nijenhuis IA & Sinninghe Damsté JS** (EVO5:MOam05:F5).

*09:45* A Climate Model/Geochemical Model on the Influence of Precessional Insolation Cycles on the Late Createaceous Climate System: A Case Study for the Western Interior Seaway: **Floegel S, DeConto R & Hay W** (EVO5:MOam06:F5).

*10:00* *BREAK*

Session chaired by Izabella Premoli-Silva

*10:30* Paleoenvironmental Controls on Turonian Black Shale Deposition within the Western Interior Basin (U.S.A.): Evidence for Changes in Paleoceanography: **Forster A, Schwark L, Thein J & Trappe J** (EVO5:MOam09:F5).

*10:45* A Santonian Cooling Event? Evidence from the Late Cretaceous Planktonic Foraminifera of the Exmouth Plateau (NW Australia, Indian Ocean): **Petrizzo MR** (EVO5:MOam10:F5).

*11:00* Evidence for Late Jurassic Release of Methane from Gas Hydrate: Opening of a Pangean Gateway?: **Padden M, Weissert H & de Rafelis M** (EVO5:MOam11:F5).

*11:15* Hot LIPs, Methane and the Carbon Isotope History of the Apticore: **Opdyke B, Erba E, Larson R & Herbert T** (EVO5:MOam12:F5).

*11:30* Orbital Chronology for the Late Paleocene Thermal Maximum: **Roehl U & Bralower TJ** (EVO5:MOam13:F5).

*11:45* Expanded Carbon Sinks at the Palaeocene/Eocene Boundary: A Global Biological Response to Clathrate Induced Climate Change: **Bains S, Norris R & Corfield R** (EVO5:MOam14:F5).

## Symposium FMF1 Room F4

### Diagenesis and Low-grade Metamorphism: In Memoriam of Martin Frey and Bernhard Kübler

**Convenors: Susanne Th. Schmidt & Laurence Warr**

Session chaired by Howard Day

*08:30* *KEYNOTE* Isotopic Constraints to Illitization Process: A Review: **Clauer N** (FMF1:MOam01:F4).

*09:00* Constraining Timing of Dyke Emplacement and Alteration in the Northern Sydney Basin, Australia: **Zwingmann H, Carr P & Doyle R** (FMF1:MOam03:F4).

*09:15* Parameters Controlling the Process of Volcanic Glass Palagonitisation: **Stroncik N & Schmincke H** (FMF1:MOam04:F4).

*09:30* Geochemical Variations during Early Low-Temperature Alteration in Young Mid-Ocean Ridge Basalts: **Le Bricon G, Honnorez J, Chabaux F, Agrinier P & Laverne C** (FMF1:MOam05:F4).

*09:45* *BREAK*

Session chaired by Laurence Warr

*10:15* Chlorite Composition Controlled by Whole-Rock Geochemistry; A DRX-EMPA-HRTEM-AEM Study in Cambrian Basaltic Rocks from the Ossa Morena Zone, SW Spain: **Lopez-Munguira A, Nieto F & Morata D** (FMF1:MOam08:F4).

*10:30* Chemical and Structural Evolution of Phyllosilicates in Associated Low-T Metamorphic Pelites and Basic Magmatites: A Case Study from the Graz Paleozoic, Eastern Alps, Austria: **Árkai P, Fenninger A & Nagy G** (FMF1:MOam09:F4).

*10:45* Hydrothermal Origin of Pumpellyite-Amphibole Parageneses in Subgreenschist Facies Metabasites, Sierra Nevada, U.S.A: **Day HW & Springer RK** (FMF1:MOam10:F4).

*11:00* The Very Low-Grade Metamorphism of the Portage Lake Volcanics, Keweenaw Peninsula/Michigan/USA- Results Based on Stable Isotopes (O, H, C) and Fluid Inclusions: **Pueschner U, Schmidt S & Mullis J** (FMF1:MOam11:F4).

*11:15* Low Grade Metamorphism in the Argentine Precordillera: A Record of Extension at the Margin of Gondwanaland?: **Rubinstein N, Bevins R & Robinson D** (FMF1:MOam12:F4).

*11:30* Low-Grade and Contact Metamorphism in Volcanic and Volcaniclastic Successions, Rio Tinguiririca Valley, Central Andes of Chile: **Belmar M, Schmidt ST, Frey M, Ferreiro Mählmann R & Mullis J** (FMF1:MOam13:F4).

## Symposium LS01 Room F2

### Earthquake Deformation and Related Surface Processes

**Convenors: M. Meghraoui & G. Michel**

Session chaired by Mustapha Meghraoui

*08:30* Seismic Activity and Fault Segmentation of the NAF in the Bolu Mountain: Relationship between the November 12, 1999 and the February 1, 1944 Earthquakes: **Barka A, Altunel E, Akyuz S, Cakir Z, Kozaci O, Lettis W, Bachhuber J, Hitchcock C & Helms J** (LS01:MOam01:F2).

*08:45* Large Earthquakes and Creep in a Collision Zone: The Chelungpu and Chihshang Faults, Taiwan: **Angelier J, Jian-Cheng L, Jyr-Ching H & Hao-Tsu C** (LS01:MOam02:F2).

*09:00* The 1999 Hector Mine Earthquake: The Latest in a Cluster of Large Earthquakes in the Eastern California Shear Zone: **Rockwell T** (LS01:MOam03:F2).

*09:15* Slip-Rate and Earthquake Recurrence Time on the Hebgen Lake Fault (Montana, USA): Constraints from Surface Exposure Dating of Alluvial Terraces and Bedrock Fault Scarp: **Van der Woerd J, Benedetti L, Caffee M, Finkel R, Ryerson F & Hebgen Lake Paleoseismology Working Group** (LS01:MOam04:F2).

*09:30* Geodetic vs Seismic Strain Rates, Ways to Estimate the Amounts of Accumulated Seismic Moments in Central Asia?: **Gero MW, Reiberger C & Michajljow W** (LS01:MOam05:F2).

*09:45* The August 17, 1999 Turkey Earthquake Seen with INSAR Imagery and Tectonic Field Observations: **Cakir Z, De Chabalier JB, Armijo R, Meyer B, Barka A & Peltzer G** (LS01:MOam06:F2).

*10:00* Active Faulting and Seismic Hazard in Lebanon: **Tapponnier P, Daeron M, King G, Jacques E, Sursock A & Elias A** (LS01:MOam07:F2).

*10:15* *BREAK*

Session chaired by Gero Michel

*10:45* Paleoseismic Investigations along the February 5, 1783 Earthquake Ruptures (Cittanova Fault, Calabria, Southern Italy), and Methodological Observations: **Bosi V & Galli P** (LS01:MOam10:F2).

*11:00* Evidence for Holocene Normal Faulting in the Epicentral Area of the 1356 Basel Earthquake (Switzerland): New Paleoseismic Results from Trenching and Geophysical Prospecting: **Ferry M, Meghraoui M, Delouis B, Huggenberger P, Spottke I, Giardini D & Granet M** (LS01:MOam11:F2).

*11:15* Investigation of the Surface Rupture of the April 14 and 18, 1928 Earthquakes in Bulgaria: **Camelbeeck T, Shanov S, Vanneste K, Nikolov G & Verbeeck K** (LS01:MOam12:F2).

*11:30* The 1904 Struma Earthquakes (SW Bulgaria): **Meyer B, Armijo R & Dimitrov D** (LS01:MOam13:F2).

*11:45* Long Paleoseismic and Paleogeodetic Records of Subduction from Sumatran Coral: **Sieh K, Natawidjaja D, Rivera L, Suwargadi B & Galetzka J** (LS01:MOam14:F2).

(Symposium LS01 Continued in Session MO pm on Page 49)

## Symposium LS09 Room G0

### The Subduction Factory

### Convenors: Catherine Chauvel & Tim Elliot

Session chaired by Gerhard Wörner

*08:30* Boron and Fluid-Mobile Element (FME) Fluxes across Kamchatka: **Leeman W, Wörner G, Churikova T, Tonarini S & Heuser A** (LS09:MOam01:G0).

*08:45* Boron Isotope Compositions of Tourmaline in High- and Ultrahigh-Pressure Metasedimentary Suites: Records of Subduction-Zone Boron Cycling: **Bebout G & Nakamura E** (LS09:MOam02:G0).

*09:00* Lithium Systematics of Arc Lavas: **Bouman C, Vroon P & Elliott T** (LS09:MOam03:G0).

*09:15* Ubiquitous Salt-Rich Brines in HP and UHP Rocks: **Philippot P & Markl G** (LS09:MOam04:G0).

*09:30* Phase Relationships in Hydrous Peridotites at High Pressure: Consequences for Water Transport at Subduction Zones: **Fumagalli P, Poli S & Stixrude L** (LS09:MOam05:G0).

*09:45* Experimental Constraints on the Water Content of Primitive Arc Basalts from St Vincent, Lesser Antilles: **Pichavant M, Mysen B & Macdonald R** (LS09:MOam06:G0).

*10:00* Seismic Images of the Japan Subduction Factory: **Zhao D** (LS09:MOam07:G0).

*10:15* *BREAK*

Session chaired by Catherine Chauvel

*10:45* Sources and Ascent Paths of Fluids and Melts in the Central Andean Subduction Zone from High Resolution Attenuation Tomography: **Schurr B, Rietbrock A & Asch G** (LS09:MOam10:G0).

*11:00* Crustal Structure and Rate of Growth of the South Sandwich Arc from Wide-Angle Seismic Data: **Bruguier N & Larter R** (LS09:MOam11:G0).

*11:15* The Thermal Structure of Subduction Zones, Honshu- A Case Study: **Kiefer B, van Keken P & Peacock S** (LS09:MOam12:G0).

*11:30* Balancing Transpressional Magmatic Arc Crustal Thickening-Tectonic Shortening Versus Magmatic Underplating: **Haschke M & Guenther A** (LS09:MOam13:G0).

*11:45* Seismic and Gravity Analyses Show Accretionary Process and Underplating beneath Juan de Fuca Strait (Cascadia Subduction Zone): **Graindorge D, Spence G, Hyndman R, Collot J & Charvis P** (LS09:MOam14:G0).

## Symposium MS01 Room F6

### Geochemistry, Structure, Defects and Dynamics of the Earth's Mantle and Core

### Convenors: Chris Ballentine, John Brodholt, Mark Rehkämper & David Price

Session chaired by Chris Ballentine

*08:30* A Hafnium Isotope and Trace Element Perspective on the Nature of the Depleted Mantle: **Chauvel C & Blichert-Toft J** (MS01:MOam01:F6).

*08:45* Mantle Domain Boundaries in the Western Pacific: Evidence from Nd-Hf Isotope Systematics: **Kempton PD, Pearce JA, Gill J & Barry T** (MS01:MOam02:F6).

*09:00* U-Series Evidence for Differentiated Upwelling Rates at the 41-45°N Mid-Atlantic Ridge: A Non-Plume Origin for the 43°N Anomaly?: **Kokfelt TF, Hémond C, Wörner G, Goslin J & Schilling J** (MS01:MOam03:F6).

*09:15* Evidence for Distinct Primitive Mantle Sources; A Noble Gas Study of the Reunion Hotspot Track: **Hanyu T, Dunai TJ, Davies GR, Kaneoka I, Nohda S & Uto K** (MS01:MOam04:F6).

*09:30* Trace Element and Isotopic (Pb-Nd-Sr and U-Series) Study of Post-Glacial Volcanic Rocks from the Neo-Volcanic Zones on Iceland: **Hauff F, Kokfelt TF, Hoernle K & Werner R** (MS01:MOam05:F6).

*09:45* New Os Isotope Data for the Deccan Traps; Plume Heads and Crustal Contamination: **Parkinson I, Widdowson M & Gibson S** (MS01:MOam06:F6).

*10:00* *BREAK*

Session chaired by John Brodholt

*10:30* *In-Situ* and Whole-Rock Os Isotope Study of the Massif Central Mantle Lithosphere Reveals a Complex Story of Melting and Metasomatism: **Alard O, Reisberg L, Lorand J, Pearson NJ, Griffin WL & O'Reilly SY** (MS01:MOam09:F6).

*10:45* Melt Percolation in an Ophiolite Mantle Monitored by Os Isotopes, PGE and REE Abundances: **Büchl A, Brügmann G, Batanova V & Hofmann A** (MS01:MOam10:F6).

*11:00* Mantle Heterogeneity and Processes in the Back-Arc Region of Patagonia: **Rivalenti G, Mazzucchelli M, Laurora A, Ciuffi SI, Vannucci R, Zanetti A & Cingolani CA** (MS01:MOam11:F6).

*11:15* Pervasive Metasomatism and Peridotite-Melt Interaction in the Lithospheric Mantle: Evidence from Mantle Xenoliths in Basalts Near the Southern Rim of the Siberian Craton: **Ionov D, Chazot G, Prikhodko V & Weis D** (MS01:MOam12:F6).

*11:30* Petrology and Isotope Geochemistry of the Erro-Tobbio Peridotites (Voltri Massif-Italy): **Romairone A, Rampone E, Piccardo GB & Abouchami W** (MS01:MOam13:F6).

*11:45* Coupled Major and Trace-Element Melting Indicators in Mid-Ocean Ridge Peridotites: **Hellebrand E, Snow JE, Dick HJ & Hofmann AW** (MS01:MOam14:F6).

(Symposium MS01 Continued in Session MO pm on Page 50)

## Symposium OS04 Room G8

### Tectonics and Sedimentation

**Convenors: Tom McCann & A. Saintot**

Session chaired by Aline Saintot

*08:30* Facies Architecture and Evolution of the Late Permian Upper Rotliegend at the Northern Margin of the NE German Basin: **Rieke H, McCann T & Negendank J** (OS04:MOam01:G8).

*08:45* Climate Stratigraphy: A Chronostratighraphic Reference Frame for Tectonically Active Basins (Late Miocene, SE Spain): **Brachert TC, Krautworst UMR, Hultzsch N & Knoerich AC** (OS04:MOam02:G8).

*09:00* Various Models of the Geodynamic Evolution and Paleogeography of the Carpathian Region: **Slaczka A & Golonka J** (OS04:MOam03:G8).

*09:15* Constraints on Himalayan Tectonic and Exhumation History Determined from the Kamlial Formation Foreland Basin Sediments, Pakistan: **Najman Y, Pringle M, Garzanti E, Stix J, White N & Khan I** (OS04:MOam04:G8).

*09:30* The Age of the Oldest Recorded Himalayan Foredeep Continental Sediments: Implications for the Orogen's Evolution: **Najman Y, Pringle M, Godin L & Oliver G** (OS04:MOam05:G8).

*09:45* Exhumation and Sedimentation- The Example of the Central Alps: I. Ar/Ar Geochronology and Chemistry of Detrital White Mica: **von Eynatten H & Wijbrans JR** (OS04:MOam06:G8).

*10:00* *BREAK*

Session chaired by Tom McCann

*10:30* A Provenance Study of a Post-Collisional Transgressive Sequence (Molare Formation, Italy) through Integrated Facies Analysis, Mineral Chemistry and $^{40}Ar/^{39}Ar$ Dating: **Barbieri C, Carrapa B, Di Giulio A & Wijbrans J** (OS04:MOam09:G8).

*10:45* Excimer Laser ICP-MS Dating of Zircons from Earth's Major Rivers: Preliminary Results from North America: **Eriksson K, Campbell I, Palin M & Allen C** (OS04:MOam10:G8).

*11:00* Nd-Isotope Systematics of Lower Palaeozoic Sediments from Eastern Avalonia: Precise Monitoring of Magmatic and Orogenic Activity: **Gerdes A, Pharaoh TC, Debacker T, Verniers J & Noble SR** (OS04:MOam11:G8).

*11:15* Geochemical Provenance Indications of Pre-Andean Sediments in Southernmost Chile (47° to 51° S): Implications for a Continental Tectonic Setting: **Augustsson C, Bahlburg H & Dobrzinski N** (OS04:MOam12:G8).

*11:30* Major Trends in Caledonian Volcanic Activity Derived from Metabentonites of the Baltic Basin: **Motuza V, Sliaupa S & Lashkovas J** (OS04:MOam13:G8).

*11:45* Measuring Pb and Ar Isotopes on the Same Material: A Tool for Provenance Evaluation: **Copeland P, Evans M & Derry L** (OS04:MOam14:G8).

## Symposium OS08 Room G7

### Geochronology and Stable Isotopes

**Convenor: Bob Cliff**

Session chaired by Bob Cliff & Mike Cosca

*08:30* The Fate and Memory of Zircon Xenocryts in Melted Metasediment: **Cornell D, Werner M, Hult J & Schersten A** (OS08:MOam01:G7).

*08:45* Trace and Rare Earth Element Geochemistry of Magmatic and Metamorphic Zircon: Caveats for Geochronological Interpretation Based on Th/U and Morphology Only: **Möller A, Poller U, Kennedy A & Kröner A** (OS08:MOam02:G7).

*09:00* Low P-T Disturbance of Titanite and Uranium-Rich Paleoproterozoic Zircons, Central Sweden: **Högdahl K, Gromet PL & Broman C** (OS08:MOam03:G7).

*09:15* The Timing of Pre-Alpine High-Pressure Metamorphism in the Eastern Alps: Constraints from U-Pb SHRIMP Dating of Eclogite Zircons from the Austro-Alpine Silvretta Nappe: **Ladenhauf C, Armstrong R, Konzett J & Miller C** (OS08:MOam04:G7).

*09:30* U-Pb SHRIMP-Dating of Zircon Domains from Eclogites of Antrona (Western Alps): Evidence for a Valais-Ocean Origin: **Liati A & Gebauer D** (OS08:MOam05:G7).

*09:45* Timing of Metamorphism in the Central High Himalaya (Makalu Region) Constrained by In-Situ Th-U-Pb Dating of Monazite by Laser Ablation ICPMS: **Kosler J, Buriankova K, Tubrett M & Sylvester P** (OS08:MOam06:G7).

*10:00* U-Pb Dating of Speleothems from the Spannagel Cave, Austria: **Cliff RA & Spoetl C** (OS08:MOam07:G7).

*10:15* *BREAK*

Session chaired by Mike Cosca & Bob Cliff

*10:45* Submicroscopic Illitization and Excess Argon Incorporation in Phengite Related to Fluid Ingress during Late Miocene Extension in the Betic Cordilleras, South-Eastern Spain: **de Jong K, Féraud G, Ruffet G, Amouric M & Wijbrans J** (OS08:MOam10:G7).

*11:00* Effects of Deformation on $^{40}Ar/^{39}Ar$ Geochronology- A Case Study of Defect-Enhanced Ar-Loss in Slowly Cooled Muscovite: **Mulch A, Cosca MA & Handy MR** (OS08:MOam11:G7).

*11:15* The Role of Deformation on Argon Diffusion in Muscovites: **Kramar N, Cosca MA & Buffat P** (OS08:MOam12:G7).

*11:30* K-Feldspars: What Does Ar-Ar Date?: **Villa IM, Hanchar JM, Gnos E & Challandes N** (OS08:MOam13:G7).

*11:45* The Thermal Evolution of a Deeply Exhumed Paleoproterozoic Orogen, Assessed by $^{40}Ar/^{39}Ar$ and U-Pb Geochronology: **Willigers BJ, Krogstad E, Wijbrans J & van Gool J** (OS08:MOam14:G7).

## Symposium PCM1 Room G6

### Environmental Mineralogy and Geochemistry – The 'Molecular Environmental Science' Perspective

**Convenors: David Vaughan, S. Clarke, G. Calas & J.V. Smith**

Session chaired by J V Smith

*08:30* *KEYNOTE* Molecular-Level Speciation of Lead and Arsenic in Soils over Geochemical Anomalies: **Morin G, Juillot F, Lecoq D, Ildefonse P, Calas G, Brown Jr. GE, Ostergren J, Chevallier P, Borensztajin S & Sole A** (PCM1:MOam01:G6).

*09:00* Electrochemical Oxidation of Pyrite in Alkaline and Acid Electrolytes: An Investigation Employing Glancing Incidence X-Ray Absorption Spectroscopy and X-Ray Photoelectron Spectroscopy: **Farquhar M, Wogelius R, Vaughan D & Wincott P** (PCM1:MOam03:G6).

*09:15* Speciation of As by XAFS Spectroscopy in Si-Bearing Fe Hydroxide Precipitates: **Tommaseo C & Kersten M** (PCM1:MOam04:G6).

*09:30* Evolution of Mineral-Fluid Interfaces Studied at Pressure with Synchrotron X-Ray Techniques: **Wogelius RA, Dysthe DK, Tang CC & Neild AA** (PCM1:MOam05:G6).

*09:45* *BREAK*

Session chaired by Simon Clarke

*10:15* Interaction of Metals in Solution with Alumina Surfaces Studied with Electronic Structure Simulations: **Warren M, Yong CW, Vaughan D & Hillier I** (PCM1:MOam08:G6).

*10:30* Etch-Pit Honeycombs on Weathered Feldspar Surfaces: Catalytic Reactors for the Origin of Life?: **Parsons I & Lee M** (PCM1:MOam09:G6).

*10:45* Heavy Metal Distribution in Surface Sediments of the Protected Wetland el Kelbia (Tunisia): **Khedhiri S, Gueddari-Darragi F & Duplay J** (PCM1:MOam10:G6).

*11:00* The Interaction of U with the Calcite Surface: Batch Sorption and Synchrotron X-Ray Standing Wave Studies: **Rihs S, Sturchio N, Orlandini K, Cheng L & Fenter P** (PCM1:MOam11:G6).

*11:15* Non-Dissociative Adsorption of Water at the Surface of Zircon: A Clue for the Origin of its Resistance to Dissolution: **Balan E, Mauri F & Calas G** (PCM1:MOam12:G6).

*11:30* Parallel Computational & Experimental Studies of the Morphological Modification of Calcium Carbonate: **Braybrook AL, Heywood BR, Jackson RA & Pitt K** (PCM1:MOam13:G6).

*11:45* Structural Characterisation of Natural Actinides (Th and U) in Natural Ceramics and Analogues: XANES and EXAFS Studies on Natural Zircons: **Harfouche M, Farges F & Petit PE** (PCM1:MOam14:G6).

## Symposium RCM6 Room F3

### Carbonate Mounds, Fluids and Margin Architecture

### Convenors: George Wolff, C. Dullo, J.-P. Henriet & T. van Weering

Session chaired by Tjeerd van Weering

*08:30* *KEYNOTE* Polygenetic Types of Seepage-Related Carbonate Deposits and Mounds: **Reitner J, Peckmann J & Arp G** (RCM6:MOam01:F3).

*09:00* Coolwater Coral Reefs and Carbonate Mounds: **Freiwald A & Dullo W** (RCM6:MOam03:F3).

*09:15* Deciphering the Messages of Carbonate Mounds: The Porcupine Scientific Drilling Project: **Henriet J, De Mol B, Dullo W, Freiwald A, Joergensen BB, Parkes J & Patching JW** (RCM6:MOam04:F3).

*09:30* Sedimentology of Cold Water Carbonate Mounds; Results from the Porcupine and Rockall Bank Margins: **de Haas H, van Weering T, de Stigter H & Blamart D** (RCM6:MOam05:F3).

*09:45* Giant Carbonate Mounds in the Rockall Trough, NE Atlantic Ocean: **van Weering TC, de Haas H, Lykke-Andersen H & de Stigter H** (RCM6:MOam06:F3).

*10:00* Downcore Distribution Patterns of Cold-Water Corals, Porcupine Margin, NE Atlantic Ocean: **Richter TO, van Weering TC, de Haas H, Stadnitskaia A, van der Gaast S, Vaars A & Labeyrie L** (RCM6:MOam07:F3).

*10:15* *BREAK*

Session chaired by J-P Henriet

*10:45* Specific Cementation in Carbonate Mud-Mound Sediments, SE Rockall Margin, NE Atlantic Ocean: **Stadnitskaia A, van Weering TC & Ivanov M** (RCM6:MOam10:F3).

*11:00* The Darwin Mounds- Possible Fluid Escape Features in the Northern Rockall Trough: **Masson D, Bett B, Billett D & Wheeler A** (RCM6:MOam11:F3).

*11:15* Biogeochemistry of the Darwin Mounds- Preliminary Results: **Kiriakoulakis K, Bett BJ & Wolff GA** (RCM6:MOam12:F3).

*11:30* Characteristics of an Active Vent in the Fore-Arc Basin of the Sunda Arc, Indonesia: **Wiedicke M, Beiersdorf H, Delisle G, Faber E, Marchig V, Weiss W, Sahling H, von Mirbach N & Koesnadi H** (RCM6:MOam13:F3).

*11:45* Growth Dynamics and Ecology of Upper Jurassic Mounds, with Comparisons to Mid-Palaeozoic Mounds: **Nose M, Schmid DU & Leinfelder RR** (RCM6:MOam14:F3).

## Symposium VPP1 Room G4

### Thermodynamic, Structural and Physical Properties of Melts and Element Fractionation in Fluid-Magmatic Systems

### Convenors: Matthias Gottschalk, Igor D. Ryabchikov & Hans Keppler

Session chaired by Matthias Gottschalk

*08:30* Fractionation of Platinum Group Elements and the Formation of Platinum Group Minerals in the Konder Massif, the Aldan Shield: **Svet M. K** (VPP1:MOam01:G4).

*08:45* Fractional Distillation and Critical Phenomena in Earth's Interior: **Ryabchikov I & Wyllie P** (VPP1:MOam02:G4).

*09:00* Thermodynamics of Solutes in Aqueous Hydrothermal Solutions at Extreme Conditions: Tough Problems and Potential Solutions: **Driesner T** (VPP1:MOam03:G4).

*09:15* Thermodynamic of Fluid Mixtures at High Temperature and Pressures: **Churakov S & Gottschalk M** (VPP1:MOam04:G4).

*09:30* Mathematical Model for Thermodynamic and Transport Properties of the NaCl-$H_2O$ System from 0-750°C, 0.1 to 500 MPa, and $X_{NaCl}$=0-1: **Driesner T** (VPP1:MOam05:G4).

*09:45* *BREAK*

Session chaired by Peter Ulmer

*10:15* Magmatic Volatile Phase Evolution- Torres del Paine Laccolith (Patagonia/Chile): **Putlitz B, Baumgartner L, Oberhänsli R, Diamond L & Altenberger U** (VPP1:MOam08:G4).

*10:30* Metals Speciation in the High Temperature Volcanic Gases of the Kudrjaviy Volcano (Iturup Island): **Churakov S, Tkachenko SI & Korzhinskii MA** (VPP1:MOam09:G4).

*10:45* Experiments in Conjugate Basalt-Water Systems- Clue to Podiform Chromite Formation and PGE Fractionation: **Matveev S & Ballhaus C** (VPP1:MOam10:G4).

*11:00* Thermodynamical and Rheological Properties of a Hydrous Basaltic Melt: **Bourgue E & Richet P** (VPP1:MOam11:G4).

*11:15* The Effect of $Fe_2O_3$ on the Viscosity of Melts in the $Na_2O$-$Al_2O_3$-$SiO_2$ System: **Webb S & Buettner H** (VPP1:MOam12:G4).

## Symposium CC01 Room G1

### Neogene Environments: Case Studies for Potential Future Greenhouse Climates

**Convenor: Peter Smolka**

Session chaired by Peter Smolka

*13:00* Reconstructing and Modeling Neogene Environments: Selected Results and Future Perspectives: **Smolka P** (CC01:MOpm21:G1).

*13:15* Deciphering Global and Regional Impacts of Long-term Changes in the Carbon Cycle in the Upwelling System off SW Africa: **Marlow JR, Tolosa I & Rosell-Mele A** (CC01:MOpm22:G1).

*13:30* The Middle-Late Miocene "Carbonate Crash" and "Biogenic Bloom" in the Cape Basin of the South Atlantic Ocean (ODP Sites 1085 and 1087): **Diester-Haass L, Meyers PA, Berger W & Baumann S** (CC01:MOpm23:G1).

*13:45* Why was the Atmospheric $CO_2$ Level Low during the Miocene?- An Investigation with a Box-Model of the Carbon Cycle: **François L & Goddéris Y** (CC01:MOpm24:G1).

*14:00* Magnetostratigraphic Record of the Late Miocene Onset of the East Asia Monsoon, and Pliocene Uplift of Northern Tibet: **Qiang X, An Z, Li Z, Powell C & Zheng H** (CC01:MOpm25:G1).

*14:15* *BREAK*

Session chaired by Peter Smolka

*14:45* Dynamics of Zonality and Climate in Northern Eurasia during Warm Neogene Epochs and Quaternary Interglacials: **Velichko A & Nechaev V** (CC01:MOpm28:G1).

*15:00* Terrestrial Paleotemperature Calculations from the Praetiglian/Tiglian (Plio-Pleistocene) Pollen Record of Lieth, Northern Germany: Implications for the Climatic Evolution of NW Europe: **Pross J, Stefan K & Volker M** (CC01:MOpm29:G1).

*15:15* Miocene Records of Climate Change from Shark Teeth and Ostracods of the North Alpine Molasse Sediments: **Vennemann TW, Janz HV & Hegner E** (CC01:MOpm30:G1).

*15:30 KEYNOTE* Global Climatic and Environmental Events Throughout the Late Neogene Time (5.5-1.2 Ma Ago): **Borzenkova II & Zubakov VA** (CC01:MOpm31:G1).

*16:00* The Influence of Vegetation on the Climate System of the Tortonian (Late Miocene): Results from Climate Modelling: **Micheels A, Mosbrugger V, Steppuhn A & Uhl D** (CC01:MOpm33:G1).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium CC02 Room G3

### High Latitude Cenozoic-Quaternary Ice Sheets and Climate – Records of their Role in Global Climate Change

**Convenors: Gary Wilson, Ralph Schneider, Andrew Kerr & Ross Powell**

Session chaired by Ralph Schneider & Ross Powell

*13:00* Cyclic Sedimentation Offshore East Antarctica during the Late Miocene: Results from ODP Site 1165, Prydz Bay: **Gruetzner J, Rebesco MA, Forsberg CF, Cooper AK & Wefer G** (CC02:MOpm21:G3).

*13:15* Future Antarctic Margin Drilling- The ANDRILL Initiative and McMurdo Sound Portfolio: **Wilson G, Florindo F, Harwood D, Naish T & Powell R** (CC02:MOpm22:G3).

*13:30* Orbitally Induced Oscillations in the East Antarctic Ice Sheet: Direct Evidence from Cape Roberts Project Drilling: **Naish T, Barrett P, Wilson G, Fielding C, Powell R, Woolfe K & Science Team CR** (CC02:MOpm23:G3).

*13:45* Mid Pleistocene Antarctic Ice Sheet and Southern Ocean Climate Instabilities: **Kleiven H & Jansen E** (CC02:MOpm24:G3).

*14:00* Constrains on the Glacial and Climate History of the Antarctic Peninsula Region Since the Last Glacial Maximum: **Ingolfsson O & Hjort C** (CC02:MOpm25:G3).

*14:15* High-Resolution Study of the Last Glacial Maximum and the Deglaciation from High Latitude European Margins: **Fevang A, Jansen E & Dokken TM** (CC02:MOpm26:G3).

*14:30* Evidence for Instabilities of the Jakobshavn Isbrae Ice Stream from Offshore Stratigraphy in Disko Bugt, West Greenland: **Lloyd J, Dix J, Park L & Kjuipers A** (CC02:MOpm27:G3).

*14:45* *BREAK*

Session chaired by Ralph Schneider & Ross Powell

*15:00* Mineralogy of Oceanic Sediments Offshore the George V L and (East Antarctica, WEGA Project): **Damiani D, Giorgetti G & Memmi I** (CC02:MOpm29:G3).

*15:15* Lakes and the Deglaciation of the Late Glacial Patagonian Icesheet: **Turner K** (CC02:MOpm30:G3).

*15:30* Eurasian Ice Sheet Limits and Hydrologic Impacts in the Barents and Kara Seas, Russia: **Forman SL, Zeeberg JJ, Lubinski D, Lammers RB & Vörösmarty CJ** (CC02:MOpm31:G3).

*15:45* Late Quaternary EAIS Melting Event Around the LŸtzow-Holm Bay and Mt. Riiser-Larsen Region: **Miura H, Seto K, Igarashi A, Maemoku H, Takada M & Moriwaki K** (CC02:MOpm32:G3).

*16:00* Quaternary Calcareous Nannofossil from Periantarctic Basins: Paleoecological and Paleoclimatic Implications: **Villa G, Palandri S & Wise SW** (CC02:MOpm33:G3).

*16:15* Eocene-Oligocene Antarctic and Southern Ocean Climatic Deterioration: Phase Relationships between Climatic and Oceanic Cooling: **Wilson G, Roberts A, Morgans H, Fabio F, Kenneth K & Sagnotti L** (CC02:MOpm34:G3).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium CC07 Room G2

### Biomarkers in Palaeoceanography and Palaeolimnology

**Convenors: Joan Grimalt & George Wolff**

Session chaired by Joan O. Grimalt

*13:00* Long-Chain Alkenones in Limnic Systems, Paleothermometers or Not?: **Schwark L & Zink K** (CC07:MOpm21:G2).

*13:15* Hopanoids as Environmental Markers: **Farrimond P, Watson D, Talbot H & Head I** (CC07:MOpm22:G2).

*13:30* Molecular Markers of Land Use Change: **Fisher E, Wake R, Oldfield F, Appleby P & Wolff G** (CC07:MOpm23:G2).

*13:45* Lipid Biomarkers as Indicators of Local Environmental Conditions in a Terrestrial Ecosystem during the Late Pleistocene and Holocene: A Case Study on Maar Lakes of the Eifel-Volcanic-Field, Germany: **Fischer T, Fuhrmann A, Wilkes H, Horsfield B, Brauer A, Negendank JF & Zolitschka B** (CC07:MOpm24:G2).

*14:00* A Biomarker Record of Holocene Environmental Changes in the Mediterranean Region- Lake Albano (Central Italy): **Hanisch S, Ariztegui D & Püttmann W** (CC07:MOpm25:G2).

*14:15* Origin, Transport and Surface Distribution of Terrigenous Organic Matter in the Equatorial Atlantic: Evidence from Lignin Chemistry, Carbon Isotopes, Pyrolysis and Petrology: **Wagner T, Holtvoeth J, Horsfield B, Schubert C & Wand U** (CC07:MOpm26:G2).

*14:30* *BREAK*

Session chaired by George Wolff

*15:00* Late Quaternary Variations of Terrigenous Organic Matter Composition on the Congo Deep-Sea Fan (ODP-Site 1075): An Organic Geochemical Multiparameter Approach: **Holtvoeth J, Wagner T, Schubert C, Horsfield B & Wand U** (CC07:MOpm29:G2).

*15:15* Tracking Paleohydrologic Change in the Mediterranean Sea using Compound Specific Hydrogen Isotopes: **Paul HA, Bernasconi SM, Andersen N & McKenzie JA** (CC07:MOpm30:G2).

*15:30* The Carbon Associated Flux of Alkenones in the North Atlantic: **Schulz-Bull DE & Thomas B** (CC07:MOpm31:G2).

*15:45* Long and Short Term Variability of Glacial Latitudinal Temperature Gradients and Terrigenous Inputs in the North Atlantic as Recorded in Sedimentary C37 Alkenones and N-Alkanes: **Calvo E, Villanueva J, Grimalt JO, Boelaert A & Labeyrie L** (CC07:MOpm32:G2).

*16:00* Alkenone Measurements of Sea Surface Temperature in the Southeastern Subtropical Pacific Ocean over the Last 400 kyr: **Calvo E, Pelejero C, Herguera JC, Palanques A & Grimalt JO** (CC07:MOpm33:G2).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium CC12 Room F1

### Quantitative Palaeoclimate and Environmental Reconstructions: Data – Model Comparisons

### Convenors: Toni Rosell-Mele, Masa Kageyama & Joel Guiot

Session chaired by Antoni Rosell-Mele

*13:00 KEYNOTE* Modeling Extreme Climates of the Past: What we have Learnt from Model-Data Comparisons within the Paleoclimate Modeling Intercomparison Project: **Joussaume S** (CC12:MOpm21:F1).

*13:30 KEYNOTE* Environmental Processes of the Ice Age: Land, Oceans, Glaciers (EPILOG): **Mix AC, Bard E & Schneider R** (CC12:MOpm23:F1).

*14:00 KEYNOTE* Ice Sheets and Sea Level of the Last Glacial Maximum: **Clark PU, Mix AC & Bard E** (CC12:MOpm25:F1).

*14:30* *BREAK*

Session chaired by Masa Kageyama & Joel Guiot

*15:00* Climatic Changes in Africa and Eurasia since the Last Glacial Maximum: **Peyron O, Guiot J, Jolly D & Tarasov P** (CC12:MOpm29:F1).

*15:15* High Resolution Models of Western European Climates at the LGM: Towards Reconciling Model-Data Disagreements: **Valdes P** (CC12:MOpm30:F1).

*15:30* How Variable was the LGM?: **Weinelt M, Pflaumann U, Sarnthein M & Vogelsang E** (CC12:MOpm31:F1).

*15:45* Mid-Holocene Validation of the PMIP Models over Europe and North America: **Bonfils C, Ducoudre-De Noblet N, Guiot J, Bartlein P & PMIP Participants** (CC12:MOpm32:F1).

*16:00* New Transfer Function from Terrestrial Molluscs using the Mutual Climatic Range Method: **Moine O, Rousseau D & Jolly D** (CC12:MOpm33:F1).

*16:15* Interoceanic Anti-Phasing of Late Pleistocene Millennial-Scale SST Cycles in the N.W. Pacific Contradicts Coupled O-A-GCM Prediction: **Sarnthein M, Kiefer T, Roberts AP, Erlenkeuser H & Grootes P** (CC12:MOpm34:F1).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium EVO7 Room F5

### Geological History of Sea-Water

### Convenors: Heide Zimmermann & Tadeusz Peryt

Session chaired by Heide Zimmermann

*13:00* Seawater Composition, BIF Deposition, Glaciation and the Rise of Oxygen: Major Changes Linked by a Late Archaean/Early Proterozoic Change in the Internal Behaviour of the Earth: **Osmaston MF** (EVO7:MOpm21:F5).

*13:15* The Chemical Evolution of Seawater during the Phanerozoic: Record from Primary Fluid Inclusions in Marine Halite: **Zimmermann H, Holland HD & Horita J** (EVO7:MOpm22:F5).

*13:30* Variation in Seawater Chemistry during the Permian and Triassic: **Kovalevych V & Peryt TM** (EVO7:MOpm23:F5).

*13:45* Did the Ocean Change in Composition during the Phanerozoic? Learning from Fluid Inclusions and Potash Sequences: **Ayora C, Taberner C, Cendon D & Pueyo JJ** (EVO7:MOpm24:F5).

*14:00* Extensive and Rapid Changes in Seawater Chemistry during Phanerozoic: Evidence from Br Contents in Basal Halite: **Siemann MG** (EVO7:MOpm25:F5).

*14:15* The Sulphur Isotopic Composition of Phanerozoic Seawater Sulphate- New Data and Preliminary Modeling: **Strauss H, Kampschulte A & Goddéris Y** (EVO7:MOpm26:F5).

*14:30* *BREAK*

Session chaired by Tadeusz Peryt

*15:00* Tournaisian Whole Rock Carbon Isotope Stratigraphy in Europe and Laurentia: **Buggisch W & Haas S** (EVO7:MOpm29:F5).

*15:15* $\delta^{18}O$ of Carbonate, Quartz and Phosphate from Belemnite Guards: Implications for the Isotopic Record of Old Fossils and the Isotopic Composition of Ancient Seawater: **Longinelli A, Iacumin P & Ramigni M** (EVO7:MOpm30:F5).

*15:30* The Oxygen Isotopic Composition of Palaeozoic Seawater-The Apatite $\delta^{18}O$ Record: **Joachimski MM, Wenzel B, van Geldern R, Day J & Buggisch W** (EVO7:MOpm31:F5).

*15:45* The Variation of Ca Isotopic Composition in Marine Phosphates and Carbonates during the Tertiary: **Schmitt A, Stille P, Bracke G & Kieffel B** (EVO7:MOpm32:F5).

*16:00* Rare Earth Element Evolution of Phanerozoic Seawater Recorded in Biogenic Apatites: **Lécuyer C, Reynard B & Grandjean P** (EVO7:MOpm33:F5).

*16:15* Rhenium and Osmium Budgets on Limestone and the Os-Isotope Composition of Middle Devonian Seawater: **Brauns CM & Haack U** (EVO7:MOpm34:F5).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium FMF6 Room F4

### Mechanisms of Fluid Flow in Metamorphic and Igneous Environments

**Convenor: Marian Holness**

Session chaired by Marian Holness

*13:00* The Behaviour of Excess Argon in Fluid Rich and Fluid Poor Systems: **Kelley SP** (FMF6:MOpm21:F4).

*13:15* How Fluids Get into and Out of Rocks during Metamorphism: **Jamtveit B, Malthe-Sorenssen A, Flekkoy E & Austrheim H** (FMF6:MOpm22:F4).

*13:30* Attempts to Date Retrogression and Quantify Fluid Infiltration into Granulite-Facies Basement within the Grampian Orogenic Belt in the Irish Caledonides: **Daly JS, Flowerdew MJ & Whitehouse M** (FMF6:MOpm23:F4).

*13:45* How Time-Integrated Fluid-Flux should Constrain the Hydrothermal Mineralization Potential of a Faulted Rock Volume: A Comparison between 3D Fluid Flow Simulations and Measured Gold Content at the Sigma Mine, Quebec, Canada: **Matthai SK, Geiger S & Garofalo P** (FMF6:MOpm24:F4).

*14:00* Fluid-Rock Interactions at the Brittle-Ductile Transition: Pressure-Temperature-Salinity Effects: **Famin V, Philippot P, Hebert R & Jolivet L** (FMF6:MOpm25:F4).

*14:15* *BREAK*

Session chaired by Dan Harlov

*14:45* Tectonic Contacts as Fluid Channels for Fluids Released during Subduction of the Zermatt-Saas Zone: **Widmer T, Thompson AB & Frueh-Green G** (FMF6:MOpm28:F4).

*15:00* Influence of Deformation and Fluid Flow on Ar/Ar and Rb/Sr Systematics in the Aar Massif Shear Zones (External Crystalline Massifs, Switzerland): **Challandes N, Marquer D & Villa IM** (FMF6:MOpm29:F4).

*15:15* High Grade Fluid Metasomatism on both a Local and Regional Scale: K-Feldspar-Quartz Grain Boundary Reaction Textures as a Product of Solid State, Fluid Induced Dehydration of Amphibolite Facies to Orthopyroxene-Bearing Granulite Facies Rocks: **Harlov D** (FMF6:MOpm30:F4).

*15:30* Heterogeneous Fluid Distribution during Prograde and Retrograde Evolution in the Pointe Géologie Gneissic Basement (Terre Adélie- East Antarctica): **Pelletier A, Guiraud M & Ménot R** (FMF6:MOpm31:F4).

*15:45* Reaction-Induced Microcracking during Pyrometamorphism, Isle of Mull, Scotland: **Holness M & Watt G** (FMF6:MOpm32:F4).

*16:00* Observations of Melt Localization in Deforming Two-Phase Rocks: **Holtzman B, Zimmerman M, Groebner N, Ginsberg S, Kohlstedt D & Phipps Morgan J** (FMF6:MOpm33:F4).

*16:15* Dilatant Behaviour in Sheared Magma Suspensions: Melt Movement and Pore Fluid Pressures: **Petford N & Koenders C** (FMF6:MOpm34:F4).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium LS01 Room F2

### Earthquake Deformation and Related Surface Processes

**Convenors: M. Meghraoui & G. Michel**

Session chaired by Thomas Rockwell

*13:00* Slip Histories of Hector Mine (Mw=7.1, October 1999), and Nazca Ridge Earthquakes (Mw=7.7, November 1996) Inferred from the Combination of INSAR and Teleseismic Data: **Salichon J, Delouis B, Lundgren P & Giardini D** (LS01:MOpm21:F2).

*13:15* The Earthquake in South Iceland on June 17, 2000: An INSAR Based Model Compared to GPS and Volumetric Strain Data: **Pedersen R, Sigmundsson F, Árnad-Ttir T, Águstsson K & Feigl K** (LS01:MOpm22:F2).

*13:30* Holocene Deformation Outside the Rift Zone of North Iceland: **Dauteuil O, Tournat F, Bouffette J, Embry J, Quété Y & Van Vliet-Lano' B** (LS01:MOpm23:F2).

*13:45* Slip Behavior of the San Andreas Fault through Several Earthquakes: **Klinger Y, Liu J, Sieh K & Rubin C** (LS01:MOpm24:F2).

*14:00* Arc-Parallel, Active Extensional Faulting in Guadeloupe (French West Indies): **Feuillet N, Tapponnier P, Manighetti I, Villemant B & King G** (LS01:MOpm25:F2).

*14:15* The September 21, 1999 Chichi Earthquake (Taiwan): Contribution of INSAR Interferometry to Analyse Permanent Ground Deformations: **Pathier E, Fruneau B, Deffontaines B, Raymond D & Angelier J** (LS01:MOpm26:F2).

*14:30* Fault Structure in the Tip Region of the Chelungpu Fault, Taiwan; Initial Results from Drilling into the Tip of a Fault: **Shipton Z, Heermance R, Tanaka H & Evans J** (LS01:MOpm27:F2).

*14:45* *BREAK*

Session chaired by Thierry Camelbeeck

*15:15* Earthquake Time-Slip Histories Determined from *In Situ* $^{36}$Cl Cosmogenic Dating of Limestone Fault Scarps: The Sparta (Greece) and the Hebgen Lake (Montana) Normal Faults: **Benedetti L, Finkel R, King G, Caffee M, Armijo R, Van Der Woerd J, Papanastassiou D, Ryerson F, Flerit F & Farber D** (LS01:MOpm30:F2).

*15:30* Results from the PALEOSEIS-Project, Switzerland: **Becker A, Davenport CA & Giardini D** (LS01:MOpm31:F2).

*15:45* The Multiple Faulting History of the Ventas de Zafarraya Fault-Paleoseismology of the Granada Depression (Southern Spain): **Reicherter K, Becker-Heidmann P, Jabaloy A, Galindo-Zaldivar J & Michel G** (LS01:MOpm32:F2).

*16:00* Evidence of Recurrent Pre-Historic Seismicity of the Alhama de Murcia Fault (Southeastern Spain): **Masana E, Santanach P, Martinez-Diaz J & Hernández-Henrile J** (LS01:MOpm33:F2).

*16:15* Geophysical Imaging of Concealed Active Faults in the Urban Area of Kobe, Japan: **Miyata T & Yamaguchi S** (LS01:MOpm34:F2).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium LS10 Room G0

### Deformation at Convergent Margins

**Convenors: John Grocott, Graeme Taylor, Ken McCaffrey & Basil Tikoff**

Session chaired by Kenneth McCaffrey

*13:00 KEYNOTE* The Connection between Surface Deformation and Mantle Flow: The Role of Absolute Versus Relative Plate Motion: **Teyssier C & Tikoff B** (LS10:MOpm21:G0).

*13:30* Clutch Tectonics, the Coupling of Lithospheric Layers, and the Role of the Lower Crust: **Tikoff B, Teyssier C & Waters C** (LS10:MOpm23:G0).

*13:45* Topographic Controls on Deformation Partitioning, Decoupling and Vertical-Axis Rotations in Thrust Belts: Insights from Sandbox Modelling: **Ornelas Marques F & Cobbold P** (LS10:MOpm24:G0).

*14:00* Low-Angle Detachment Horizons in the Overriding Plate at Subduction Boundaries: Examples from the Ketilidian Orogen, Southern Greenland, and the Central Andes: **Grocott J, Chadwick B, Garde A, McCaffrey K & Taylor G** (LS10:MOpm25:G0).

*14:15* Stress State and Depth of Mechanical Coupling along the El Pilar Fault, NE Venezuela: **Russo R** (LS10:MOpm26:G0).

*14:30* The Concept of Deformation Domains: Understanding the Kinematics of Neogene Deformation at the Central Andean Convergent Plate Margin: **Riller U & Oncken O** (LS10:MOpm27:G0).

*14:45 BREAK*

Session chaired by Graeme Taylor

*15:15* The Kinematics of Continental Detachment Faulting: Slip Rates along the Cordillera Blanca Detachment Fault Deduced from In Situ Produced Cosmogenic Radionuclides $^{10}$Be and $^{26}$Al: **Farber D, Hancock G & Finkel B** (LS10:MOpm30:G0).

*15:30* Deformation and Kinematics along the Denali Fault System, Southwestern Yukon, Canada: **White JC** (LS10:MOpm31:G0).

*15:45* Oblique Convergence Under Increasing Plate-Boundary Curvature: Pliocene-Quaternary Transtensional Basins and Deformation of the Eastern Hellenic Forearc: **Ten Veen JH & Kleinspehn KL** (LS10:MOpm32:G0).

*16:00* Domainal Deformation and Strain Partitioning during Upper-Plate Transpression: An Example from the Southern Uplands Terrane, Scotland: **Holdsworth B, Tavarnelli E, Jones R, Clegg P, McCaffrey K & Pinheiro R** (LS10:MOpm33:G0).

*16:15* Transtensional Deformation at the Junction between a Backarc Basin and an Island Arc: The Transition between the Okinawa Trough and Kyushu Island, SW Japan: **Fabbri O, Monié P & Aiming L** (LS10:MOpm34:G0).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

(Symposium LS10 Continued in Session TU am on Page 57)

## Symposium MS01 Room F6

### Geochemistry, Structure, Defects and Dynamics of the Earth's Mantle and Core

**Convenors: Chris Ballentine, John Brodholt, Mark Rehkämper & David Price**

Session chaired by Mark Rehkämper

*13:00* Isotope Systematics Require Layered Mantle Convection: **Turcotte D, Paul D & White W** (MS01:MOpm21:F6).

*13:15* Combined Modeling of Crust-Mantle Nd and Hf Isotope Evolution and an $\varepsilon_{Hf}$ vs. Time Curve for the Depleted Mantle: **Kramers JD, Kleinhanns I, Kreissig K & Nägler TF** (MS01:MOpm22:F6).

*13:30* Implications of Nb/U, Th/U and Sm/Nd Variations in Plume Magmas for the Relationship between Continental and Oceanic Crust Formation and the Development of the Depleted Mantle: **Campbell I** (MS01:MOpm23:F6).

*13:45* Carbon Recycling and the Structure of the Mantle: **Coltice N, Simon L, Gillet P & Lecuyer C** (MS01:MOpm24:F6).

*14:00* Primordial Terrestrial Noble Gases: Indicating Core-Mantle Interaction Rather Than a Primordial or Heterogeneous Mantle?: **Trieloff M & Kunz J** (MS01:MOpm25:F6).

*14:15* A Dynamical Investigation of the Terrestrial Heat-Helium Imbalance: **van Keken P, Ballentine C & Porcelli D** (MS01:MOpm26:F6).

*14:30 BREAK*

Session chaired by David Price

*15:00* Geochemical Evolution of an Heterogeneous, Open and Convective Reservoir: Theoretical and Numerical Approaches: **Lewin E & Allegre C** (MS01:MOpm29:F6).

*15:15* The Effect of Plate Dynamics on the Convective Mixing of Chemical Heterogeneities in the Earth's Mantle: **Rehkamper M, Schmalzl J & Hansen U** (MS01:MOpm30:F6).

*15:30* Effect of Continents on Mid Ocean Basalt Chemistry: **Humler E & Besse J** (MS01:MOpm31:F6).

*15:45* Geochemical and Numerical Model Evidences for Mesozoic Mantle Avalanche: **Machetel P & Humler E** (MS01:MOpm32:F6).

*16:00* Thermo-Chemical Structure in the Deep Mantle Inferred from Geodynamic, Seismic and Mineral Physics Data: **Forte AM & Mitrovica JX** (MS01:MOpm33:F6).

*16:15* Mineral Physics Constraints on Viscous Flow Models of Mantle Flow: **Steinberger B & Calderwood A** (MS01:MOpm34:F6).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

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## Symposium MS10 Room G8

### The Role of Mantle Carbon in the Global Carbon Cycle (A Session of the EuroCarb ESF Network)

**Convenors: Adrian Jones, Frances Wall, Joerg Keller & Iain Gilmour**

Session chaired by Frances Wall

*13:00* Mantle Carbon and Global Carbon Fluxes; A Planetary Review: **Jones A** (MS10:MOpm21:G8).

*13:15* Carbon Flux Through Time: **Bailey D** (MS10:MOpm22:G8).

*13:30* The Formation of Mantle Diamonds: **Navon O** (MS10:MOpm23:G8).

*13:45* Carbonatite Magmatism: Constraints on the History of Carbonate Sediment Recycling in the Upper Mantle Since the Archaean: **Wilson M & Spencer EA** (MS10:MOpm24:G8).

*14:00* Fibrous Diamonds in an Eclogite Xenolith from the Mbuji Mayi Kimberlites (Congo): **Cartigny P, Demaiffe D, Pineau F & Javoy M** (MS10:MOpm25:G8).

*14:15* Linking HIMU Subducted Slabs with Oceanic Carbonatites: The High Nb/Ta Cape Verde Carbonatites: **Jørgensen JØ & Holm PM** (MS10:MOpm26:G8).

*14:30* *BREAK*

Session chaired by Iain Gilmour

*15:00* Isotopic Regional Zoning Versus Tectonic Polarity in Pleistocene Leucitites, Melilitites and Carbonatites of the Italian Peninsula: **Keith B, Francesca C & Francesco S** (MS10:MOpm29:G8).

*15:15* Wall-Rock Reaction, Decarbonation, and Carbonatite Eruption from the Upper Mantle: **Hammouda T** (MS10:MOpm30:G8).

*15:30* Transport of Mantle Carbon to the Crust and Surface by Carbonatitic Magmatism: Report of the ESF Workshop in the Kaiserstuhl Carbonatite Complex: **Keller J** (MS10:MOpm31:G8).

*15:45* Mantle Carbon Flux as Tested by Petroleum Reservoirs: **Fleet A** (MS10:MOpm32:G8).

*16:00* Magma Degassing and Mixing in Oceanic Basaltic Volcanism: Carbon and Water Behaviour: **Pineau F, Jendrzejewski N & Javoy M** (MS10:MOpm33:G8).

*16:15* Origin of REE Mineralization in the Khibina and Vuoriyarvi Carbonatites (Kola, Russia)- Evidence from a C-O and Sr-Nd Isotope Study: **Zaitsev AN, Demény A, Sindern S & Wall F** (MS10:MOpm34:G8).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium OS05 Room G6

### Recent Advances in the Physics and Chemistry of Minerals

### Convenors: David Vaughan, Matthias Gottschalk, Mark D. Welch, Thomas Armbruster & Fernando Scordari

Session chaired by David Vaughan

*13:00* Chemical and Magnetic Properties of Hematite Produced by Phase Separation from Hematite-Ilmenite Solid Solution during Slow Cooling: **McEnroe SA, Harrison R, Robinson P & Dyar D** (OS05:MOpm21:G6).

*13:15* A Neutron-Diffraction Study of the Amblygonite-Montebrasite Solid Solution: **Groat L & Chakoumakos B** (OS05:MOpm22:G6).

*13:30* X-Ray Topography of Spinel Twinned Crystals by Synchrotron and Conventional Sources: **Fregola RA & Scandale E** (OS05:MOpm23:G6).

*13:45* Crystal Chemical Characterization of Natural Ti-Bearing Garnets: Solved Problems and Open Questions: **Schingaro E, Scordari F, Malitesta C & Pedrazzi G** (OS05:MOpm24:G6).

*14:00* Time-Temperature Dependent Variation of the Elastic Modulus of $MgAl_2O_4$ Spinel and its Relationship to Order-Disorder: **Street J & Redfern S** (OS05:MOpm25:G6).

*14:15* *BREAK*

Session chaired by Thomas Armbruster

*14:45* Morphology of Forsterite Dendrites: **Faure F, Trolliard G, Montel J & Soulestin B** (OS05:MOpm28:G6).

*15:00* EPR, ESEEM and SQUID Magnetometry of Sulfides: Magnetic Properties of the Synthetic Analogue of Tetrahedrite $Cu_{12}Sb_4S_{13}$: **Barbon A, Bernardini GP, Borrini D, Brustolon M, Caneschi A, Danti C, Di Benedetto F, Emiliani C, Gatteschi D & Romanelli M** (OS05:MOpm29:G6).

*15:15* MIE Scattering and Charge Transfer Phenomena as Causes of UV Absorption in Natural and Synthetic Almandine Garnets: **Khomenko V, Langer K & Wirth R** (OS05:MOpm30:G6).

*15:30* X-Ray Spectrometry of Light Elements and Transition Metals using the Electron Probe Microanalyser: **Hayward C, Vaughan D, Plant D & Henderson M** (OS05:MOpm31:G6).

*15:45* Valence Determination of Iron in Clays by Electron Energy Loss Spectroscopy: **Guillaume D, Pironon J, Ghanbaja J & Laurent P** (OS05:MOpm32:G6).

*16:00* Mechanical Fibration in Crystals and Bitumens: **Yushkin N** (OS05:MOpm33:G6).

*16:15* Elastic Moduli of Low-Symmetry Structures from First Principles: **Warren M, Milman V, Winkler B, Hytha M, Gale J & Schreuer J** (OS05:MOpm34:G6).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

(Symposium OS05 Continued in Session TU am on Page 59)

## Symposium OS09 Room G7

### Geochemistry

### Convenors: Rex Taylor & Valerie Chavagnac

Session chaired by Valerie Chavagnac

*13:00* Evolution of Rare Earth Element Speciation in Hydrothermal Fluids: **Aggarwal J** (OS09:MOpm21:G7).

*13:15* Trace Element Modelling and Source Constraints of Tholeiitic to Calc-Alkaline Basalts from Depleted Asthenospheric Mantle Source, Mt. Erciyes Stratovolcano, Central Anatolia, Turkey: **Kurkcuoglu B, Sen E, Aydar E, Temel A & Gourgaud A** (OS09:MOpm22:G7).

*13:30* Isotopic Evolution of Alkali-Basalts and Associated Megacrysts of Biu- and Jos-Plateau, Northern Cameroon Volcanic Line: **Rankenburg K, Lassiter J & Brey G** (OS09:MOpm23:G7).

*13:45* Volcanism Proceding the Breakup of Africa and Arabia: A Case Study from NE Jordan: **Shaw JE, Baker J, Menzies M & Ibrahim K** (OS09:MOpm24:G7).

*14:00* A New Rapid Method for Simultaneous Determination of Radium Isotopes in Natural Waters using “Radium Rad Disks” and A-Spectrometry: **Purkl S & Eisenhauer A** (OS09:MOpm25:G7).

*14:15* Multiple Ion Counting of Trans Uranic Radio-Nuclides using MC-ICP-MS: **Taylor RN, Milton JA, Warneke T, Croudace IW, Warwick PE & Nesbitt RW** (OS09:MOpm26:G7).

*14:30* Assessing the Role of Colloids on [U] and ($^{234}U/^{238}U$) Signatures in Diluted Waters: The Mount Cameroon Case: **Riotte J, Chabaux F, Benedetti M, Gérard M, Boulègue J, Dia A & Ildephonse P** (OS09:MOpm27:G7).

*14:45* *BREAK*

Session chaired by Rex Taylor

*15:15* Tracing of the U Fluxes in the Ganges-Brahmaputra River System: **Chabaux F, Riotte J, Clauer N & France-Lanord C** (OS09:MOpm30:G7).

*15:30* Chemical Characterization of Dissolved and Particulate Organic Carbon in Seawater: Do Particles Pump DOC from the Surface to the Deep Ocean?: **Gogou A, Repeta DJ & Honjo S** (OS09:MOpm31:G7).

*15:45* Boron Isotopes as Paleoenvironmental Tracers: A Case Study from Lake Lisan, Israel: **Rocholl A, Meixner A, Schulz C, Romer, RL & Stein M** (OS09:MOpm32:G7).

*16:00* Rapid Chemical Separation and Isotopic Analysis of Lu-Hf, Sm-Nd and the REE by MC-ICPMS: **Ulfbeck D, Baker J, Krogstad E & Waight T** (OS09:MOpm33:G7).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

(Symposium OS09 Continued in Session TU am on Page 59)

## Symposium PCM4 Room G5

### Quantitative Modelling of Diagenetic, Metamorphic, Deformational and Igneous Microstructures

**Convenors: Paul Bons, Lukas Baumgartner & John Wheeler**

Session chaired by Paul Bons

*13:00 KEYNOTE* The Numerical Simulation of Microstructures in Geological and Non-Geological Materials: **Jessell M** (PCM4:MOpm21:G5).

*13:30* Melting by Numbers: Chemical Versus Textural Melt Fertility: **Vigneresse JL & Kriegsman L** (PCM4:MOpm23:G5).

*13:45* Numerical Modelling of the Evolution of Single Phase or two Phase Microstructures during Dynamic Recrystallization: Implications for Strain Localization and Flow Behaviour: **Piazolo S, Jessell MW, Bons PD, Evans L & Passchier CW** (PCM4:MOpm24:G5).

*14:00* The Effect of Interface Slip on the Rotation and Stabilization of Monoclinic Particles in Simple Shear: **Mancktelow N, Arbaret L & Pennacchioni G** (PCM4:MOpm25:G5).

*14:15* Numerical Modelling of Simple Shear Flow around Rigid Objects in different Matrix Materials: **ten Grotenhuis S, Passchier CW & Bons PD** (PCM4:MOpm26:G5).

*14:30 BREAK*

Session chaired by Mark Jessell

*15:00 KEYNOTE* Quantitative Models of Metamorphic Microstructures: **Foster, Jr. CT** (PCM4:MOpm29:G5).

*15:30* The Correct use of Shear Bands as Kinematic Indicators: **Grasemann B & Stuewe K** (PCM4:MOpm31:G5).

*15:45* Modeling Formation of Mafic Segregations with Felsic Halos as a Solid-State Diffusion Process: **Olsen SN & Fisher GW** (PCM4:MOpm32:G5).

*16:00* Microstructural Analysis of Mass-Flow Textures in High Grade Ignimbrites: The Example of Nuraxi Tuff: **Pioli L, Rosi M, Mazzarini F & Longo A** (PCM4:MOpm33:G5).

*16:15* The Rounding Kinetics of Olivine in Fe, Fe-S: **Cabane H, Provost A & Laporte D** (PCM4:MOpm34:G5).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

## Symposium RCM4 Room F3

### Continental Slope Stability (COSTA) of Ocean Margins – Achievements and Challenges

**Convenors: Juergen Mienert, Jacques Locat, Pierre Cochonat & Phil Weaver**

Session chaired by Jacques Locat

*13:00* Landslide-Generated Tsunamis on the Pacific Coast of North America- Observation and Modeling: **Bornhold BD, Thomson RE, Kulikov EA, Rabinovich AB & Fine IV** (RCM4:MOpm21:F3).

*13:15* Slope Instability of Continental Margins: **Mienert J & Berndt C** (RCM4:MOpm22:F3).

*13:30* Passage of Debris Flows and Turbidity Currents through a Topographic Constriction: Seafloor Erosion and Deflection of Pathways: **Gee MJR, Masson DG, Watts AB & Mitchell NC** (RCM4:MOpm23:F3).

*13:45* Continental Margin Slope Failure Related to Shallow Overpressures, Gas and Gas Hydrates: Observations and Processes: **Orange D, Hovland M & Greene G** (RCM4:MOpm24:F3).

*14:00* Submarine Slope Failure Related to Fluid Migration Processes (Deep Offshore Gulf of Guinea): **Cochonat P, Sultan N, Bourillet J, Cayocca F, Cauquil E & Colliat J** (RCM4:MOpm25:F3).

*14:15* An Alternative Mechanism for Slope Failure: **Purdy EG** (RCM4:MOpm26:F3).

*14:30* Subsurface Physical Property Prediction from 3-D Seismic Data: The Challenge for Marine Geotechnical Studies: **Hart B, Long B & Locat J** (RCM4:MOpm27:F3).

*14:45 BREAK*

Session chaired by Phil Weaver

*15:15* An Initial Assessment of the History of the Afen Slide, Faroe-Shetland Channel: **Long D, Bulat J & Holmes R** (RCM4:MOpm30:F3).

*15:30* Evaluation of the Risk of Marine Slope Instability using a Pseudo 3D Approach: Application to the Nice Slope: **Sultan N, Cochonat P, Bourillet J & Cayocca F** (RCM4:MOpm31:F3).

*15:45* The Role of Hydroplanning in Subaqueous Mass Transport as Ascertained by Integrating Field Data with Experimental and Theoretical Studies: **Elverhøi A, De Blasio FV, Harbitz C, Ilstad T & Marr J** (RCM4:MOpm32:F3).

*16:00* Simulating Submarine Slope Instability Initiation using Centrifuge Model Testing: **Phillips R, Popescu R & Konrad JM** (RCM4:MOpm33:F3).

*16:15* Laboratory Investigation on the Effect of Fines on Cyclic Resistance: **Konrad J, Eliadorani A & Byrne PM** (RCM4:MOpm34:F3).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).

(Symposium RCM4 Continued in Session TU am on Page 60)

## Symposium VPP6 Room G4

### Volcanic Hazards: Monitoring, Prediction and Mitigation

**Convenor: Hazel Rymer**

Session chaired by Hazel Rymer

*13:00* Cities on Volcanoes on Limestone: Volcanic $CO_2$ Related Hazards in the City of Rome and Hinterland (Italy): **Funiciello R, Giordano G, de Rita D, Quattrocchi F, Capelli G, Esposito A, Fabbri M, Rodani S & Donati S** (VPP6:MOpm21:G4).

*13:15* Carbon Dioxide and Radon Hazards in the Alban Hills Volcanic District (Central Italy): **Beaubien SE, Ciotoli G, Lombardi S & Nolasco D** (VPP6:MOpm22:G4).

*13:30* The Investigation of Fumarolic Gases to Forecast Volcanic Activity: **Martini M, Buccianti A, Giannini L, Montegrossi G, Tassi F & Vaselli O** (VPP6:MOpm23:G4).

*13:45* Fluid Phase Monitoring at El Chichon Volcano, Chiapas, Mexico: Compositional Changes Related to the Activity of the System: **Tassi F, Vaselli O, Capaccioni B, Montegrossi G, Buccianti A, Nencetti A, Taran Y & Macias JL** (VPP6:MOpm24:G4).

*14:00* What is Happening at the Depth of a few Hundred Meters at Stromboli: **Vergniolle S** (VPP6:MOpm25:G4).

*14:15* *BREAK*

Session chaired by Glyn Williams-Jones

*14:45* Estimation of Physical Parameters of Vulcanian Eruption of the Soufriere Hills Volcano, Montserrat: **Formenti Y & Druitt T** (VPP6:MOpm28:G4).

*15:00* Geology and Volcanic Hazards of El Misti Volcano Near the City of Arequipa, Peru: **Thouret J & Finizola A** (VPP6:MOpm29:G4).

*15:15* Piton de la Fournaise Volcano, Reunion Island, Starts a New Cycle of High Eruptive Activity: **Staudacher T, Aki K, Bachèlery P, Catherine P, Ferrazzini V, Hochard D, Kowalski P, Ricard LP, Villeneuve N & Cheminée JL** (VPP6:MOpm30:G4).

*15:30* Application of Non-Conventional Techniques for Magnetic Monitoring of Active Volcanoes: **Del Negro C, Currenti G & Fortuna L** (VPP6:MOpm31:G4).

*15:45* Combined Discrete and Continuous Gravity Observations at Mt. Etna: **Carbone D, Budetta G, Greco F & Rymer H** (VPP6:MOpm32:G4).

*16:00* INSAR Monitoring of Evolution of Deformation at Krafla Volcano (North Iceland), 1992-2000: **Henriot O, Villemin T & Jouanne F** (VPP6:MOpm33:G4).

*16:15* The Application of a Long Range Laser Scanner for Monitoring Volcanic Activity on Mount Etna: **Hunter G, Pinkerton H, Airey R & Calvari S** (VPP6:MOpm34:G4).

*16:45 PRESIDENTIAL LECTURE* Europrobe: Multidisciplinary Studies of Continental Lithosphere: **David G. Gee** (PL01:MOpm36:G0).