



## Conference Programme

### Monday 8<sup>th</sup> July

15:00-18:30 Workshops Uncertainty / Analogue modelling

18:30 **POSTER SESSION A + ICEBREAKER PARTY**

### Tuesday 9<sup>th</sup> July

9:00-9:15 **DRT conference opening**

**ORAL PRESENTATIONS:** *Chairs Manish Mamtani and Maria Gema Llorens*

9:15-9:45 Solicited Talk: Finch et al. *Microstructural evolution of ductile shear zones during tectonic switching*

9:45-10:00 Grujic et al. *Kinematics of eclogite during the Alpine orogeny: A comparative study of the Adula nappe and Cima Lunga unit*

10:00-10:15 Ahmed et al. *Deformation of mid-crustal granitoids within extensional shear zones: An example from the Abu Markhat granitoids, Arabian-Nubian Shield*

10:15-10:30 Dey et al. *The role of Dauphiné Twin Boundaries on grain boundary misorientation and energy distribution in quartz*

10:30-10:45 Zhang et al. *Quartz enhances frictional strength in dolomite fault gouge*

10:45-11:15 **POSTER SESSION A + COFFEE BREAK**

**ORAL PRESENTATIONS:** *Chairs Melanie Finch and Albert Griera*

11:15-11:30 Mamtani et al. *Nanostructures in minerals in the kinematic reference frame of deformed rocks – an integrated SEM-TEM study and its implications for structural geology research*

11:30-11:45 Mameri et al. *Mid-crust rheologic variation along the Alpine Fault*

11:45-12:00 Hao et al. *Dynamic recrystallization during visco-plastic deformation of halite polycrystals: full-field simulation of simple shear versus pure shear*

12:00-12:15 Moreno et al. *Microstructural Dynamics in Ice Cores During Abrupt Climate Events*

12:15-12:30 Bons et al. *Folding of intrinsically anisotropic rocks*

12:30-12:45 Koenemann. *Physics of anisotropic loading: shear dilation, a new thermodynamic state function, and its effects in fracture and petrology*

12:45-14:00 **LUNCH**

**ORAL PRESENTATIONS:** *Chairs Johanna Heeb and Paul Bons*

14:00-14:15 Gridin and Ostapchuk (online). *On reaviling of tectonic fault behaviour*

14:15-14:30 Schrank et al. *Synchrotron X-ray Backscatter Diffraction Microscopy (XBDM) and X-ray Fluorescence Microscopy (XFM) for the rapid microstructural and -chemical characterization of deformed rocks*



14:30-14:45 Ribeiro et al. *Major element and isotope diffusion through dislocation networks in deformed garnet*

14:45-15:00 Das Kaushik et al. *Dislocation microstructures of garnet in pseudotachylyte: Implications on thermal effect, and recovery rates during seismic slip in shear zone*

15:00-15:15 Olesch-Byrne et al. *The role of fluid migration in a mylonitic shear zone in REE ore deposit formation*

15:15-15:30 Carpenter et al. *Strain initiation by localised fluid influx in the mid crust: A case study from the Upper Badcall shear zone, NW Scotland*

15:30-16:00 **POSTER SESSION A + COFFEE BREAK**

**ORAL PRESENTATIONS:** *Chairs Daniel García Castellanos and Montse Torné*

16:00-16:15 Jiménez-Munt et al. *Upper mantle characterization and geodynamics of Western Central Mediterranean region, from an integrated geophysical geochemical modelling*

16:15-16:30 Regorda and Roda. *Thermo-mechanical effects of microcontinent collision on ocean-continent subduction system*

16:30-16:45 Vilacis et al. *Continental dynamic topography inferred from global hiatus surfaces since the Upper Jurassic*

16:45-17:00 Hussain Waqas et al. *Enhancing Geological Modeling through Seismic Data Integration in PZero Software*

17:00-17:15 **PLENARY DISCUSSION**

17:15-17:30 **DRT CONFERENCE UPDATE**

17:30-19:00 **POSTER SESSION A + EVENING RECEPTION**

**Wednesday 10<sup>th</sup> July**

9:00-9:15 DRT conference update

**ORAL PRESENTATIONS:** *Chairs Mark Jessell and Sergio Llana Fúnez*

9:15-9:45 Solicited Talk: Baratoux et al. *Geodynamic evolution of the West African Craton*

9:45-10:00 Koffi et al. *A tectonic model for the juxtaposition of granulite- and amphibolite-facies rocks in the Eburnean orogenic belt (Sassandra - Cavally domain, SW Côte d'Ivoire)*

10:00-10:15 Moreno-Martín et al. *Reconstruction of the different stages of the Cadomian peri-Gondwanan arc based on structural data in SW Iberian Massif*

10:15-10:30 Caxito et al. *Near-synchronous evolution of the 6,000 km-long, transcontinental Transbrasiliano-Kandi-4°50' shear zone system during western Gondwana assembly*

10:30-10:45 Li et al. *Deformation decoupling and thermal evolution across different crustal levels along an arc-arc collisional zone in Central Asia*

10:45-11:15 **CHANGE POSTERS FROM SESSION A TO B + COFFEE BREAK**

**ORAL PRESENTATIONS:** *Chairs Djodje Grujic and Lenka Baratoux*



11:15-11:30 Díez- Fernández et al. *Late Variscan faults and the exhumation of high-pressure rocks (SW Iberian Massif)*

11:30-11:45 Del Sole et al. *Understanding fault architecture evolution in space and time: new structural, geochronological and thermal constraints from the Carboneras Fault (SE Spain)*

11:45-12:00 Wu and Hong. *Formation mechanism and physical simulation of segmented overlays of the depth strike-slip faults in Tarim basin*

12:00-12:15 Bistacchi et al. *Update and appraisal on multi-scale post-metamorphic brittle tectonics in the Pennine Alps of Valle d'Aosta*

12:15-12:30 Caso et al. *Melt pathways in the lower continental crust from map- to microscale: combined quantitative multidisciplinary approach applied in the Valpelline Series (Western Alps)*

12:30-12:45 Vignaroli et al. *Crustal shortening in the Eastern Southern Alps (Italy): results from the Valsugana and Belluno thrust zones*

12:45-14:00 **LUNCH**

**ORAL PRESENTATIONS:** Chairs Andrea Bistacchi and Ruben Díez Fernández

14:00-14:15 Ortolano et al. *Quantitative meso- and micro-structural analysis of the meso-Alpine mylonites of the southern Calabrian Peloritani Composite Terrain: a contribution in unravelling the western Mediterranean microplates kinematics*

14:15-14:30 Papeschi et al. *Shearing and exhumation of carbonated serpentinites on the Island of Elba subduction channel (Northern Apennines, Italy)*

14:30-14:45 Maresca et al. *Integrating rift inheritance in a slab pull/trench retreat system through a crustal balanced cross-section of the central Apennine*

14:45-15:00 Najafi et al. *Role of pre- and syn-obduction depositional units during the Semail ophiolite tectonic emplacement*

15:00-15:30 **PLENARY DISCUSSION**

15:30-16:00 **POSTER SESSION B + COFFEE BREAK**

**ORAL PRESENTATIONS:** Chairs Ivone Jimenez Munt and Giulio Viola

16:00-16:15 Cheng et al. *Boudinage and folding of oblique single layers in bulk constrictional strain fields: Results from analogue modelling*

16:15-16:30 Arachchige et al. *Lithospheric scale analogue modelling of rifting and inversion: The effect of the degree of obliquity*

16:30-16:45 Withers et al. *Can tectonic-scale analogue models explain the structural complexity of the 2016 Mw 7.8 Kaikōura earthquake?*

16:45-17:30 **DRT SOCIETY GENERAL ASSEMBLY**

17:30-19:00 **POSTER SESSION B + EVENING RECEPTION**

**20:00 CONFERENCE DINNER (RESTAURANT MUSSOL ARENAS) -**  
<https://maps.app.goo.gl/4dbytuGyh9e7kqtV9>



## Thursday 11<sup>th</sup> July

9:00-9:15 DRT Conference update

**ORAL PRESENTATIONS:** *Chairs Antonio Teixell and Pablo Granada*

9:15-9:30 Heydarzadeh and Bastami (online). *Diapiric activity within the outcropped Miocene evaporites, the northern Central Iran*

9:30-10:00 Solicited Talk: Vergés et al. *The role of evaporitic detachment levels in shaping the structure of orogenic fold belts based on field examples*

10:00-10:15 Závada et al. *Caprock shapes salt extrusions in the Zagros Fold and Thrust Belt (Iran)*

10:15-10:30 Cofrade et al. *Fracture system characterization across welds and minibasins: the Azag Minibasin field analog (High Atlas, Morocco)*

10:30-10:45 Heeb and Hangx. *Evolution of mechanical and transport properties of rock salt under simulated cavern wall conditions during cyclical hydrogen storage*

10:45-11:15 **POSTER SESSION B + COFFEE BREAK**

**ORAL PRESENTATIONS:** *Chairs Gaetano Ortolano and Enrique Gomez-Rivas*

11:15-11:30 Asti et al. *Structural evolution of a post-orogenic, intermontane fault system: an example from the Martana Fault System (Northern Apennines, Italy)*

11:30-11:45 Di Luzio et al. *Tectonic and slope-scale gravitational deformation in orogenic belts: New insights from regional inventories in central Apennines (Italy)*

11:45-12:00 Medina-Cascales et al. *Active fault control in Plio-Quaternary gypsum veins (the Galera Fault, S Spain)*

12:00-12:15 Tekin et al. *Quantitative Tectonic Activity Assessment of Manisa Fault: A multi-dimensional approach*

12:15-12:30 García-Castellanos et al. *Thermomechanical modelling of uplift during lithospheric slab tearing and its topographic impact on S Iberia basins*

12:30-12:45 **PLENARY DISCUSSION**

12:45-14:00 **LUNCH**

**ORAL PRESENTATIONS:** *Chairs Christoph Schrank and Riccardo Asti*

14:00-14:15 Wintsch et al. *Diffusion and reaction creep in a “fluid absent” retrograde phyllonite zone*

14:15-14:30 Rocca et al. *U-Pb carbonate dating as a tool to unravel complex fault evolution: an example from the central Southern Alps (Italy)*

14:30-14:45 González-Esvertit et al. *Coupled mylonitization and giant quartz vein formation in the basement of the Pyrenees*

14:45-15:00 Vidal-Reyes et al. *Monazite bearing syntectonic veins: processes and timing during low-T deformation in the Mexican Orogen*



15:00-15:15 Schirripa et al. *Structural control on the upwelling of fluids from the Val d'Agri hydrocarbon reservoir (Southern Italy)*

15:15-15:30 PLENARY DISCUSSION

15:30-16:00 **PICK UP POSTERS + COFFEE BREAK**

**ORAL PRESENTATIONS:** *Chairs Eugenio Fazio and Juan Alcalde*

16:00-16:15 Portes, Jessell et al. *Combining feature engineering with non-linear projection to navigate geophysical data*

16:15-16:30 Carola et al. *The El Tordell thrust and Súria Anticline fracture pattern characterized using fieldwork and 3D digital outcrops*

16:30-16:45 Benedetti et al. *Scale independent unbiased statistical length analysis of linear features: Adapting survival analysis techniques to geological applications*

16:45-17:00 Casiraghi et al. *Quantitative parametrization of fracture networks Digital Outcrop Model: a complete workflow*

17:00-17:15 Ramirez-Perez et al. *Salt-embedded basins in energy transition. Characterization of the sedimentary succession of the Estopanyà and Boix synclines (South-Central Pyrenees) as outcrop analogues for CCS and geothermal reservoirs*

17:15-17:30 DRT PLENARY DISCUSSION

17:30-17:45 **DRT awards and closing ceremony**

#### **POSTER SESSION A:**

Corvò et al. *Even strong materials can weak: heterogenous microstructural behaviour of amphibole and clinopyroxene from a middle crustal shear zone*

Yokohama and Nagahama. *Strain hardening due to calcite twin based on some interface theories*

Griera and Lebensohn. *Microstructure evolution during deformation of polycrystalline aggregates: full field mechanical approach coupling dislocation and diffusion creep*

Llorens et al. *Fabric-induced anisotropy in polar ice: a comparison between natural samples and viscoplastic numerical models*

Muto et al. *Probing high-strain rate deformation by impact experiments and fractal analysis of brittle fault rocks*

Kuehn et al. *Deformation in accretionary wedge sediments – the Papaku fault example*

Das Kaushik et al. *Structural, petrological and geochronological records of closure of Permian back-arc basin: Proto-Japan and its relation to NE Asian tectonics*

Ahmed and Piazzolo, *Grain size insensitive deformation mechanism of naturally deformed amphibolite in the middle crust: An example from the Abu Markhat shear zone, Arabian-Nubian shield.*



Kilian and Stipp. *Microstructure-based decomposition of quartz CPO*

Huang et al. *CPO and quantitative textural analyses within slip zone from carbonate fault rock*

Kone et al. *Microstructures of the ductile Sassandra shear zone, separating the Archean cratonic nucleus and the Palaeoproterozoic crust in NW Côte d'Ivoire, West African Craton*

Laurich et al. *Deformation Indicators in Compacted Salt: Differences in Laboratory and Real Use Cases*

McGill et al. *Micro-porosity found in quartz shear bands from Ikaria, Greece: implications from Hyperspectral Cathodoluminescence and Electron Backscatter Diffraction*

Cruset and Vergés. *Isotopic dating of fracture-filling and sedimentary carbonates constraining the tectonic compression in the Neuquén Basin, Andean fold and thrust belt*

Finch, Olesch-Byrne et al. *Rheology modification in subduction channels due to eclogite facies metasomatism (Rocky Beach Metamorphic Mélange, Port Macquarie, Australia)*

Schrank et al. *Evidence for stress-reaction coupling during the growth of antitaxial fibrous veins from X-ray Fluorescence Microscopy*

Papeschi et al. *Geologic and metamorphic constraints on magma emplacement to validate regional seismic tomography of Tuscany (Project MIGRATE)*

Finch et al. *Porosity changes in shear zones during tectonic switching*

Gomez-Rivas et al. *Formation of gypsum vein networks in a deformed zone: insights from the Montsant anticlinorium (Catalan Coastal Ranges)*

Fatihi and Samsu. *Mapping of Geological Fractures: A CNN Approach*

Clarke et al. *Quantifying Resolution of Digital Outcrop Models using Synthetic Test Objects*

Mayolle et al. *Fault process/damage zones in porous carbonates: first analyses of Ta'Cenc faults, Gozo island*

González-Esvertit et al. *Evaporites for the sustainable exploration and appraisal of mineral resources and Geo-Energy applications: the Iberian Evaporite Structure Database (IESDB)*

Vidal-Reyes et al. *Geothermal potential near the Alps-Apennines tectonic limit: an integrative perspective*

Fazio et al. *Strain analysis of intrusive rocks using field measurements and 3D virtual outcrop models*

Fazio et al. *An integrated multiscale approach, from microfabric analysis to field- and UAV surveys of mylonites (Calabria, Italy)*

## **POSTER SESSION B:**

Giraldo. *Miocene soft-sediment deformation structures around Madrid (Spain)*

Guardia et al. *Mechanical and geometrical controls on fold/thrust nappes: insights from numerical simulations applied to the Eaux-Chaudes fold nappe (Alpine W Pyrenees)*

Bakhtbidar et al. *Salt Dynamics in Rifted Margins: Insights from Numerical Modeling*



- Cocco et al. *Numerical modelling of the Sardinia-Corsica block lithosphere*
- Cocco et al. *Influence of inherited superposed folding in the structural style of fold-and-thrust belts (FTB)*
- Whiters et al. *A baseline model for fault development across transpressive plate boundaries*
- Zhang et al. *Deep mantle anomalies and their surface dynamic topographic response*
- Krzyża et al. *Influence of caprock on shallow deformation in salt diapirs – insights from numerical and analogue modelling*
- Biswas et al. *Complete Dyke Dimensions from Incomplete Outcrops*
- Das and Mondal. *Deciphering stress state condition at the base of seismogenic zone: Insights from fractured feldspar porphyroclast and fault slip data from Neoproterozoic Closepet granite, India*
- Amabile et al. *The Variscan basement in the southern Corsica (France): the tectono-metamorphic evolution of the high-grade metamorphic rocks of Fautea-Favone complex*
- Amarir et al. *Determination of the tectonic evolution from brittle structures, and calcite twins on an intracontinental belt: Western High Atlas (WHA), Morocco*
- Granado et al. *Basement - Cover superposed folding in the Pyrenean Axial Zone*
- Piloni et al. *Structural and metamorphic evolution of the tectonic mélanges in the Alpine Subduction Complex (Piemonte – Sesia-Lanzo Zone boundary, Western Italian Alps)*
- Stipp et al. *The interplay of transpression and metamorphic doming in the southwestern Tauern Window*
- Llana-Funez et al. *Seismic patterns in NW Iberian peninsula and their relation to crustal structure*
- Maity et al. *The Role of Progressive Riedel Shear Dynamics in the Disposition of Ductile Shear Zones in Granitoids: A Field Geologists' Perspective from the Bundelkhand Craton, India*
- Monti et al. *3D Geomodelling of Alpine Structures with PZero: the Misox Shear Zone (Swiss)*
- Moreno-Martín et al. *Onset of Variscan deformation in SW Iberia: constraints from structural data and implications for paleogeographic reconstructions*
- Díez Fernández et al. *An Alpine megafold in Central Iberia*
- Espinoza et al. *Pre-Cenozoic brittle deformation in the southern Central Andes: K-Ar Illite dating of fault gouges suggest pre-straining of crust in the region of the Andean Plateau and Eastern Cordillera*
- Serrano-López et al. *Structure, microstructure and kinematics of the Tonalá-Escuintla shear zone in southern Mexico*
- Parui and Bhattacharyya. *Documenting climate-induced deformation in the Himalayan orogenic belt*
- Parui et al. *Unraveling the structural evolution of the Yeneena basin hosting Cu deposits: Preliminary results*



Arachchige et al. *Magma solidification effects during sill emplacement: insights from laboratory experiments*

Najafi et al. *Timing of deformation across the Zagros fold belt*

Mameri et al. *The quartz paleo-piezometer in exhuming crustal rocks: a stress-control experimental evaluation*

Torné et al. *Exploring the Geothermal Potential in the Iberian Peninsula: AI-Enhanced Subsurface Analysis*

Fialkiewicz et al. (online) *Kinematic modeling of fault-related structures within anisotropic layered rocks of Northern Calcareous Alps (Eastern Alps, Austria)*

Mohan et al. (online) *Investigating the regional scale strain variations in the Banded Iron Formations of the Bundelkhand Tectonic Zone: Insights from Anisotropy of Magnetic Susceptibility Studies*

Tomar et al. (online) *Unveiling the evolution of the Giant Quartz Reefs in the Bundelkhand Craton of North-Central India: A tectonic conundrum*

Ibáñez-Belloso et al. *Structure and evolution of the Cameros basin: Application of salt tectonics and numerical modelling to its structural interpretation*

Carrión-Jiménez et al. *The Amagmag remnant stock as tracker of the growth history of a salt wall, Morocco*

Peris et al. *From compression to extension in the Eastern Pyrenees: new insights from low-temperature thermochronology*