

Geodynamics of convergent systems: tectonics, metamorphism and rheology

<https://meetingorganizer.copernicus.org/EGU2020/session/36287>

Conveners: *Soret M., Angiboust S., Raimbourg H., Braden Z., Roche V. and Konopásek J.*

Monday, 4 May. 14:00-15:45

- 1) **Brandon Shuck et al.** Strike-Slip Enables Subduction Initiation Beneath a Failed Rift: New Seismic Constraints from Puysegur Margin, New Zealand
- 2) **Philip Groß et al.** Three-dimensional temperature variations in a fossil subduction zone resolved by RSCM thermometry (Tauern Window, Eastern Alps)
- 3) **Nikolaus Froitzheim.** Deep subduction and exhumation of continental crust in the Alps
- 4) **Thomas Lamont et al.** The Cycladic subduction zone from birth to death: Insights into the subduction cooling rate conundrum
- 5) **Daniel Rutte et al.** Eventlike exhumation of high-grade blocks in the young Franciscan subduction zone
- 6) **Michal Jakubowicz et al.** Nd, Sr and stable isotope signatures of ancient methane-seep carbonates (Eocene, Washington, USA) as a record of incipient subduction at the Cascadia convergent margin. **See highlights on page #2**
- 7) **Santanu Kumar Bhowmik and Mayashir Rajkakati.** Multistage Exhumation History of Ultra-cool Oceanic (U)HP eclogites: New evidence from the Nagaland Ophiolite Complex (NOC), NE India

Monday, 4 May. 16:15-18:00

- 1) **Yiqiong Zhang et al.** Yuli Belt in the eastern Taiwan orogen: a part of suture zone separating Eurasian and Philippine Sea plates
- 2) **Masataka Kinoshita et al.** Thermal regime around the Chile Triple Junction based on JAMSTEC MR18-06 cruise 'EPIC'. **See highlights on page #2**
- 3) **Niall Groome et al.** Accretionary processes and stratigraphic reconstruction of Neoproterozoic oceanic crust in North Wales, UK
- 4) **Matthijs Smit and Philip von Strandmann.** Deep fluid release beneath arcs from delayed breaching of the slab lower crust
- 5) **Bénédicte Cenki-Tok, Derya Gürer et al.** Intra-oceanic subduction initiation recorded by the metamorphic sole of the New Caledonia ophiolite: petrological, structural and age constraints
- 6) **Mayda Arrieta-Prieto et al.** Metamorphic evolution of Raspas complex (Ecuador) and its relation with a J-K belt of melanges in NW of the South American plate.
- 7) **Andreas Kammer and Michael Avila.** Structural framework and regional significance of the Northandean Cretaceous subduction cycle

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Jakubowicz et al.: Nd, Sr and stable isotope signatures of ancient methane-seep carbonates (Eocene, Washington, USA) as a record of incipient subduction at the Cascadia convergent margin.

The earliest stages of tectonic evolution of the Cascadia convergent margin, following accretion of the igneous Siletzia terrane at 50-45 Ma, remain insufficiently understood. Here, we provide a different perspective on the timing and structural background of the subduction reconfiguration by analysing Nd, Sr, C and O isotope composition of middle Eocene (42.5–40.5 Ma) methane seep carbonates formed in the Cascadia forearc. Our results provide evidence that an active subduction system, with its expulsion of deep-seated, overpressured fluids, must have been well in place in Cascadia prior to the first record of mature volcanic arc magmatism in the Cascade Range at ca. 40 Ma.

16:15-18:00

Kinoshita et al.: Thermal regime around the Chile Triple Junction based on JAMSTEC MR18-06 cruise 'EPIC'

- We obtained 6 piston cores with heat flow data at the Chile Triple Junction at 46S using JAMSTEC R/V Mirai;
- Sediments on the ridge axis are turbidite dominant with lower density (1.6~1.8 g/cc) and very high sedimentation rate (1~3 m/ky);
- Heat flow in the axial graben range 140-210 mW/m², lower than expected as an active ridge. It suggests lower magmatic activity and/or high sedimentation rate.