Various-scale controls of complex subduction dynamics on magmatic-hydrothermal processes in eastern Mediterranean
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Various-scale controls of complex subduction dynamics on magmatic-hydrothermal processes in eastern Mediterranean

Introduction

One deposits and related magmatism in subduction and post-subduction environments are controlled by the internal processes that control the generation and migration of magmatic fluid dynamics from the melting of the subducted oceanic crust to the upper crust. The melt composition is also controlled by the thermal field within the subduction zone, which is influenced by the scale of subduction events.

Large-scale evolution: input from kinematic reconstructions

The subduction process is a complex and dynamic process that involves the interaction of tectonic plates and the generation of magmatic and hydrothermal fluids. The process is controlled by the scale of subduction events, which can range from small-scale processes to large-scale processes that involve the entire length of the subduction zone.

Small-scale evolution: the Miocene geodynamics of the Aegean and western Anatolia

Since 35-50 Ma, fast slab retreat resulted in the opening of the Aegean back-arc domain. However, 15 Ma ago, a major change occurred in the dynamics of this back-arc opening. Which processes affect the distribution of mineralization and magmatism?

In the Cyclades, the activity of large-scale detachment systems such as the North Cycladic Detachment System (NCDS) and the West Cycladic Detachment System (WCDS) is contemporaneous with the emplacement of magmatic intrusions and ore deposits.

Conclusion

In eastern Mediterranean region, a sequence of subduction events has led to the migration of magmatic-hydrothermal systems. This migration is controlled by the scale of the subduction events and the thermal field within the subduction zone.

References

Various scales of controls on the generation and migration of magmatic and hydrothermal systems are observed in the eastern Mediterranean, which are controlled by the scale of subduction events and the thermal field within the subduction zone.