

GMPV Seminar:

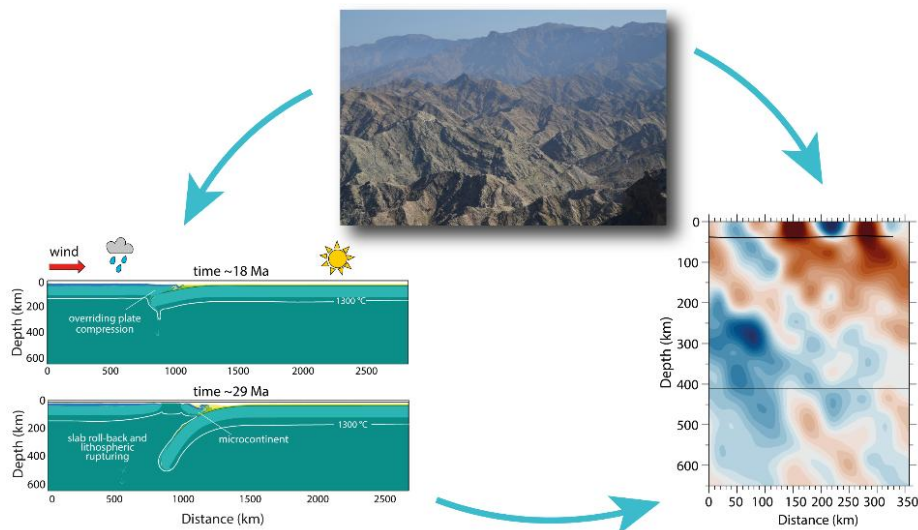
Friday 5 December 2025 at 4:30 pm, room 1011 (U4)

Sinking or floating? The interplay between erosion and tectonics in controlling continental lithosphere fate within subduction zones

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During subduction, rocks are carried into the mantle, being destroyed or exhumed at the surface after experiencing processes at depths reaching up to ~120 km and which are not directly observable. Despite numerical modelling is widely used to reconstruct subduction dynamics, the relative contribution of convergence rates, lithosphere rheology and the surface mass redistribution by erosional processes in driving the continental plate topographic evolution and overall strain, remains elusive. The behaviour of the continental plate during subduction has been investigated by an extensive parametric study on key physical parameters using a 2D fully coupled thermo-mechanical and landscape evolution numerical model. The same approach was applied to model the Oman subduction, allowing the reconstruction of the continental crust subduction and exhumation during the Oman mountains convergence.



Geodynamic reconstruction from fieldwork and structural analysis (Saih Hatat Window, Oman mountains) validated by geodynamic numerical modelling and tomographic data.

The seminars are open to students, PhD students, Postdocs, and all the interested colleagues.