



A new crustal-scale cross-section of the southern Taiwan orogenic wedge constrained by structural, geophysical, seismotectonic data and thermo-mechanical modelling

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The Taiwan orogen has long been the focus of theoretical studies on the relationships between surface processes, tectonics and climate. As a result Taiwan has become famous as an example of the steady evolution of orogenic wedges where erosion triggered by seasonal tropical typhoons balances the accretionary influx. One main assumption under these analytical or numerical studies is that the present-day structure and the Miocene-Pliocene geodynamic evolution are both well established. However, they are still open questions on the way convergence between Philippine Sea plate and Eurasia was and is currently accommodated beneath the Central Range. In order to examine the current un(certainties) on its tectonic history and structure, we present here a new crustal-scale balanced cross-section of southern Taiwan, which takes into account subsurface data, thermo-chronometric ages, new structural constraints from the Central Range, as well as the recent constraints on the deep structure of the orogen from geophysical and seismotectonic model validated by thermo-mechanical modelling.