



The South-West extrusion of Taiwan

Benoît Deffontaines and the Deffontaines Team

GTMC, Université Paris-Est, Marne-la Vallée, France (benoit.deffontaines@univ-mlv.fr)

Neotectonic Interpretation of the different marine surveys (ACT, ...) swath bathymetry and different onshore-offshore seismic profiles combined to classical structural fieldwork, geodetic, seismological and interferometric studies lead us to propose a global structural scheme and confirm the regional escape tectonics affecting both onshore-offshore of SW Taiwan (Angelier et al., 2008, Tectonophysics).

First, it is highlighted here the difficulty to only interpret the swath bathymetry even in the northern tip of the Manila accretionary prism which is a rather simple geological context but affected by both (1) a strong amount of sedimentation due to the Taiwan mountain belt erosion, and (2) to the submarine erosion of the giant submarine Penghu canyon.

The Second point, highlights the importance of the seismic interpretation in order to get the offshore bedding and structural data combined with the swath bathymetry and to the photointerpretation of the digital Terrain Model combined to the accurate geological maps to precisely delineate the blocks that is inferred to be submitted to a classical escape tectonic .

The third interesting result is the precise study of the two new major structural boundaries Fangliao and Young-An structures which guides the SW Taiwan extrusion . Combined with onshore studies (e.g. interferometry (DIN-SAR), geodetic, seismology and field work) which give (1) locations, characterization and quantification on the interseismic displacements and (2) lead us to modify our view of the global tectonic structures of the SW Taiwan. To conclude, it is highly recommended to combine both approaches on and offshore in order to improve geology and active structures in that part of the world. This work had been possible with the great help of Jacques Angelier that all authors would like to deeply thank here.