



## **Crustal Erosion and Subduction of continental Asperity: Sumba Island and Forearc, Indonesia**

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The eastern termination of the Sunda subduction zone, east of 120°E, represents a sharp boundary in the style of deformation of the upper plate from that of a conventional frontal convergence to a segment where the forearc and the back-arc domains are drastic modified - around the triangular Savu Basin and Sumba island -, thus indicating perturbation of the subduction. The subduction zone had also previously changed drastically during the Miocene, as shown by land-verging arc migration.

Structural data and distribution of reefal terraces as observed in the field and on satellite documents indicate that Sumba island is presently undergoing an important extensional regime at the surface, associated to regional uplift, which may be interpreted as the result of a large ramp-fold above a thrust situated south of the island, accommodating part of the convergence. The uplift is associated with general tilt of the island, which raises the southern coast of the island more than the northern one, resulting in tremendous mass wasting along the coast and large-scale curvilinear normal faults inside the island. The most important of these gravitational collapse is located at the receding side of an advancing circular dome, and shows striking similarities with those observed in accretionary wedges affected by seamounts subduction.

The part of the forearc basin occupied by the Savu basin basin is poorly deformed particularly in its central part and appears to act as a rigid buttress for the convergence between Banda and the Australian margin, allowing the deformation to be transferred northward into the actively shortening back-arc area. However, early inherited basement structures on the edges of the basin correspond to preferably uplifted zones. Therefore the transition between the undisturbed subduction and perturbed subduc-

tion may result from 1°) the subduction of crustal fragments of the Australian margin since the beginning of the Pliocene, 2°) the inherited structures of the upper plate.