PROGRESSIVE STRAIN LOCALISATION ALONG THE INDIA/EURASIA OBLIQUE COLLISION IN MYANMAR

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Since the Eocene, India is brushing the western margin of Indochina (Eurasia), inducing during most of the Cenozoic a 100km wide shear zone marked in central Myanmar by a series of pull-part basins deposited on a stretched metamorphic continental crust. This transtensive dextral motion was followed by dominant dextral transpression active between 10 and 8 Ma. The Central Myanmar basins are inverted along SW and NE verging thrusts, and both western and eastern margins (Arakan Yoma and Shan scarp) indicate dextral wrenching and uplift. Oceanic spreading in the Andaman Basin is post-Pliocene, indicating a major shift from distributed intra-continental extension to localised spreading ridge segments accretion. At present-time, India-Eurasia oblique motion is accommodated partly along the dextral Sagaing fault and partly along the Indo-Burma ranges. The tectonic framework thus seems to have evolved through time from distributed to localised deformation, involving today a small number of active faults. Dextral shearing has preferentially developed on both sides of the stretched Central Myanmar basins. We describe first the ductile and brittle fabrics that can be observed in the exhumed metamorphic rocks exposed along the Shan scarp and in the Mogok metamorphic belt (MMB). The MMB is characterised by a dominant NNW-SSE trending extension marked by ductile stretching structures and associated N070 brittle normal faults linked to the opening of the Central Basins in the Myanmar Lowlands. Later, from Late Miocene to present, inversion of these basins occurred, and these ductile and brittle fabrics were dissected by strike-slip transpressive right-lateral faults that form the Shan Scarp Fault Zone (SSFZ) associated with the active strike-slip Sagaing Fault. The Late Miocene transition between a dominant transtensive to a rather transpressive stress regime is apparently coeval with incipient intraplate deformation in the Indian Ocean. Both events could be the response to a major plate...
reorganisation, i.e. the formation of a new India-Australia plate boundary.