SUNDALAND MOTION DETECTED FROM GEODYSSEA GPS MEASUREMENTS : PART II - RELATIVE MOTION OF SUNDALAND AND SOUTH CHINA BLOCKS; IMPLICATIONS ON INDIA / EURASIA COLLISION AND ON THE TECTONICS OF TAIWAN

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In part I, we have defined the motion of the Sundaland block with respect to Eurasia. We compare this motion to the motion of the South China block with respect to Eurasia as defined by Holt et al. (1995). We note that the motion predicted by Holt et al at Shanghai is on excellent agreement with the recent VLBI solution of Heki (1996) and that the motion predicted at Taipei also agrees with the Geodyssea solution there. The results of local GPS measurements at Taiwan by YU et al. (1995) confirm that Taipei belongs to the main South China block. We then note that the pattern of motion revealed is such that the boundaries, between India and Sundaland on the one hand and between Tibet and South China on the other hand, are purely transform along a N/S direction. In other words, the eastward component of motion of the indenter is compensated by an equal eastward component of motion of the South China and Sundaland blocks. The poles of motion are situated in such a way that this eastward component is maximal at the latitude of the eastern Himalayan syntaxis and decreases northward and southward. Thus Taiwan is now situated at the latitude of maximal eastward velocity. We discuss the geodynamic implications of these kinematics on the tectonics of Taiwan based on the relative motion history between the Sundaland and South China blocks along their common Red River Fault boundary.

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