DISTRIBUTION OF DEFORMATION ACCROSS THE SUNDALAND / PHILIPPINE SEA PLATE BOUNDARY FROM GPS RESULTS.

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Convergence between rigid Sundaland and the Philippine Sea plate (PSP) is distributed across a 600 km wide zone including the stretched continental margin and the Sulawesi - Luzon deformed volcanic belt.
GEODYSSEA simple baselines study indicate a variation from South to North (Philippines / Molucca / Sulawesi) of the location of maximum shortening.

- Across the northern Philippines, 70% of the shortening is absorbed along the Manila Trench/Philippine fault system, the remaining beeing accomodated along the northern segment of the Philippine trench.
- Across the central Philippines, the Manila trench is pinned and 70% of the convergence is absorbed along the Philippine trench. There, 30% corresponds to thrusting and folding in the Visayas.
- In the Southern Philippines 30% is also taken across Mindanao and another 25% along the Negros - Sulu trench, allowing only 45% of convergence along the Philippine trench.

The Molucca Sea accomodates 75% of the convergence within a less than 250 km wide zone. Taking into account the 25% of the Negros - Sulu trench, the Philippine trench is inactive and the Celebes sea floor may be considered rigid.
South of the Molucca Sea the effect of the PSP convergence with Sundaland is transmitted trough Australian microblocks (Sula - Buton) to the North Sulawesi trench, and to a lesser extend to the Makassar strait, accomodating 4.5cm/y and 1.2cm/y respectively. At this latitude a minor but geologically significant part of the shortening is absorbed as far as 1000km from the PHSP in the Crocker belt of Brunei.

Differencial motion across this wide deformed zone individualize segments separated by transfer zones (Southern Luzon, Cotabato, Sorong - Palu).

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