

## **Geometry and kinematics of the Late Cenozoic Pacific—Eurasia +North America Boundary**

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Quaternary faults of eastern Asia which are parallel to the Pacific margin run both along and as far away of it as the other side of the marginal seas and back-arc basins. Most of the faults of the belt reveal dextral component of motion that likely diminishes landward down to very low fault movement rates. In the north Pacific they are extended with the dextral faults of Alaska and west North America. Together with the island arc systems of east and northeast Asia these faults constitute a single mobile belt between the Pacific plate, from one side, and the North American and Eurasian plates, from the other.

The island arc systems of the north and northwest Pacific are similarly asymmetric, their apexes and back-arc basins shifted towards their west or southwest corners relative to the arc midpoints. If interpreted as having resulted from the arc's yielding to the pressure from the subducting Pacific plate, which is oblique, these features may also be suggestive of the same dextral shear within the Asian segment of the belt.

The inner limit of this late Cenozoic Asian-North American (Circum-Pacific) belt follows a great circle on the Earth globe, and is the seaward limit of the more rigid insides of the EU and NA. The amount of tangent dextral component of oblique Pacific subduction in its Asian segment roughly equals that of dextral transform shear along the belt in its North American segment. The EU+NA–PA boundary thus shows up as a single wide and “soft” plate boundary rather than a line-like systems of trenches along which the entire relative motions between the plates could resolve.