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Structure of Pacific seismofocal zone – Rethinking the subduction model

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The position and depth of focus of earthquakes in areas of Benioff zones are studied around the Pacific, in which the quake focus spreads from crust to upper mantle regime. We see that the epicenters of the Benioff zones tend to cut a number of specific depth, forming a series of "seismic planes" and defining stage structure of these zones. Epicenters of the Benioff zone from one "seismic planes" often arranged in a straight chains - a “seysmolines" length of 200 km. We measured azimuthal directions of the upper and lower edges of the seismic focal zones and “seismolines" and derived at the following results;

Results:

1. The structure of the Benioff zone is expressed by multiple sub-horizontal "seismic planes" , where foci of earthquakes are mostly concentrated.
2. Within "seismic planes" numerous direct foci chains of length 200 km - “seismolines" are manifested.
3. Those facts force us to assume substantially block structure of Benioff zone.
4. General directions of the edges of Pacific seismic focal zones 0-5[U+F0B0], 40-55 [U+F0B0], 85-90 [U+F0B0], 140-145 [U+F0B0] (there is a sudden prevalence of orthogonal (sublatitudinally-submeridional) system above the diagonal).
5. These directions are preserved throughout the depth of the seismic focal zone.
6. The general thrust of the linear component of the Benioff seismic zone is in good comparison with systems of the orthogonal regular global network of fractures.
7. Block structure of Benioff zone and global features of the “seismolines" directions hardly compatible with the subduction model.