

Similarities between southwest Japan and Mexico

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Both of southwest Japan and Mexico belong to arc-tension/slab-tension type stress regime. In these arcs, a horizontal stress gradient exists in the upper plate. Some drag forces beneath the upper plate are necessary to produce the stress gradient. It also makes the forearc compression counteracting the slab tension. The drag forces under the upper plate will be provided by mantle convection currents or upwelling plumes. The seaward dragged upper plate will produce "suction" on the subducting plate resulting in the extra tension in the slab.

The young Cocos and Rivera plates are subducting beneath Mexico, and the age of these subducting plate is similar to that of the Shikoku Basin subducting along the Nankai Trough.

Both of southwest Japan and Mexico belong to arc-tension/slab-tension type stress regime. The slab is down-dip tension beneath Kyushu and Mexico, and beneath southwest Japan, it shows arc-parallel tension. In these arcs, a horizontal stress gradient exists in the upper plate. Mantle drag forces beneath the upper plate are necessary to produce such stress gradients. It also makes the forearc compression to counteract the slab pull force. Those drag forces under the upper plate will be provided by mantle convection currents or upwelling plumes. The seaward dragged upper plate will produce "suction" on the subducting plate, resulting in the extra tension in the slab.