

## Accepted Manuscript

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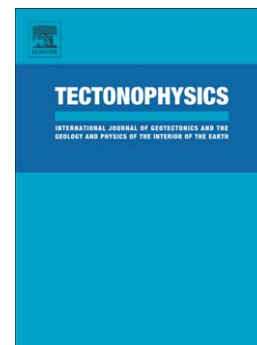
PII: S0040-1951(16)30382-1  
DOI: doi: [10.1016/j.tecto.2016.09.021](https://doi.org/10.1016/j.tecto.2016.09.021)  
Reference: TECTO 127253

To appear in: *Tectonophysics*

Received date: 21 June 2016  
Revised date: 14 September 2016  
Accepted date: 15 September 2016

Please cite this article as: Paulssen, Hanneke, Vos, Denise de, Slab remnants beneath the Baja California peninsula: Seismic constraints and tectonic implications, *Tectonophysics* (2016), doi: [10.1016/j.tecto.2016.09.021](https://doi.org/10.1016/j.tecto.2016.09.021)

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# Slab remnants beneath the Baja California peninsula: seismic constraints and tectonic implications

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## Abstract

The formation of the Gulf of California has been related to the cessation of subduction of the Guadalupe and Magdalena microplates. Various studies have identified features that point to the presence of a slab remnant beneath the Baja California peninsula, but its depth range and lateral extent remained unclear. In this study we used surface wave phase velocity and receiver function data of NARS-Baja stations around the Gulf of California to better constrain the location of the slab. For stations in central and southern Baja California the shear velocity models show an upper mantle high-velocity layer with its top in the depth range from 115 to 135 km and a thickness varying between roughly 40 and 60 km. These high-velocity anomalies are interpreted as subducted slab remnants. In contrast, the models for the northern peninsula show no slab signature. This change directly correlates with the variation in relative motion between the Baja California peninsula and the Pacific plate as measured by GPS data. It is inferred that the stalled slab fragments beneath the peninsula produce strong coupling between Baja

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