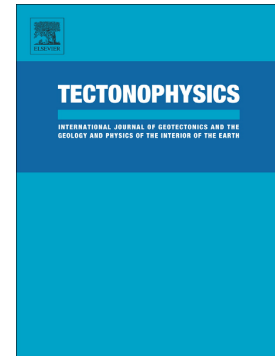


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Seismic triplication used to reveal slab subduction that had disappeared in the late Mesozoic
beneath the northeastern South China Sea

Xiaoran Wang^a, Qiusheng Li^{a*}, Guohui Li^b, Yuanze Zhou^{c,d}, Zhuo Ye^a, Hongshuang Zhang^a

^a Institute of Geology, Chinese Academy of Geological Sciences, Key Laboratory of Sinoprobe and Geodynamics, Ministry of Land and Resources, Beijing 100037, China.

^b Key Laboratory of Continental Collision and Plateau Uplift, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing 100101, China.

^c Key Laboratory of Computational Geodynamics, Chinese Academy of Sciences, Beijing 100049, China.

^d College of Earth Science, University of Chinese Academy of Sciences, Beijing 100049, China.

*Corresponding author. Tel.: +86 10 57909080. e-Mail address: lqs1958@163.com

Abstract:

We provided a new study of the seismic velocity structure of the mantle transition zone (MTZ) beneath the northeastern South China Sea using P-wave triplications from two earthquakes at the central Philippines recorded by the Chinese Digital Seismic Network. Through fitting the observed and theoretical triplications modeled by the dynamic ray tracing method for traveltimes, and the reflectivity method for synthetic waveforms using grid-searching method, best-fit velocity models based on IASP91 were obtained to constrain the P-wave velocity structure of the MTZ. The models show that a high-velocity anomaly (HVA) resides at the bottom of MTZ. The HVA is 215 km to 225 km thick, with a P-wave velocity increment of 1.0% between 450 km and 665 km or 675 km transition and increase by 2.5-3.5% at 665 km or 675 km depth. The P-wave velocity increment ranges from

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