# Article information:

Crustal S‐wave velocity structure across the northeastern South China Sea continental margin: implications for lithology and mantle exhumation - Hou - 2019 - Earth and Planetary Physics - Wiley Online Library
<https://agupubs.onlinelibrary.wiley.com/doi/10.26464/epp2019033>

# Article summary:

1. The northeastern margin of the South China Sea (SCS) is a non-volcanic margin, but post-spreading volcanism is massive and lower crustal high-velocity anomalies are widespread.

2. An S-wave velocity (V\_S) model and a V\_P/V\_S model were created for the northeastern margin by using an existing P-wave velocity (V\_P) model as the starting model for 2-D kinematic S-wave forward ray tracing.

3. Two isolated high-velocity zones (HVZs) were found in the lower crust of the continental slope, indicating mafic composition, most likely of amphibolite facies. A third high-velocity zone was found in the continent-ocean transition zone, most likely to be a consequence of serpentinization of upwelled upper mantle.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Crustal S‐wave velocity structure across the northeastern South China Sea continental margin: implications for lithology and mantle exhumation” by Hou et al. provides an interesting insight into the seismic velocities, lithology, and geophysical properties of the northeastern margin of the South China Sea (SCS). The authors present an S‐wave velocity (V\_S) model and a V\_P/V\_S model for this region based on existing P‐wave velocity (V\_P) models. They also identify two isolated high‐velocity zones (HVZs) in the lower crust of the continental slope that indicate mafic composition, most likely amphibolite facies. Additionally, they find a third high‐velocity zone in the continent‐ocean transition zone that is likely due to serpentinization of upwelled upper mantle material.

The article appears to be reliable and trustworthy overall; however, there are some potential biases that should be noted. For example, it does not explore any counterarguments or alternative explanations for its findings; instead it focuses solely on supporting its own claims with evidence from existing models and data sets. Additionally, it does not discuss any possible risks associated with its findings or provide any information about how these findings could potentially impact local populations or ecosystems in this region. Furthermore, while it does provide some empirical relationships between seismic velocities and degree of serpentinization, it does not provide any evidence to support these relationships or explain why they exist in this particular region. Finally, while it does mention post‐spreading volcanism as being massive in this area, it does not provide any further details about what type of volcanism is occurring or how much activity has been observed over time.

In conclusion, while this article provides an interesting insight into seismic velocities and lithology in this region of the SCS, there are some potential biases that should be noted when considering its trustworthiness and reliability.

# Topics for further research:

* South China Sea continental margin
* Mantle exhumation
* Seismic velocity models
* Post-spreading volcanism
* Amphibolite facies
* Serpentinization processes

# Report location:

<https://www.fullpicture.app/item/e9e2c9cfbb5a5033583d70c2d6c77c7a>