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A new regional seismic velocity model of the inner core beneath the Pacific Ocean RASHNI ANANDAWANSHA, New Mexico State University, LAUREN WASZEK, New Mexico State University , Australian National University — Despite the inner core's relatively small size, it plays an important role in governing Earth's dynamics. Seismically, the inner core is characterized by complex features; the dominant structures being an east-west asymmetry in seismic velocity and attenuation, and cylindrical anisotropy, with various regional differences. Origin(s) of these features of is still unknown. Anisotropy appears weak at the inner core boundary, but stronger at depths; this also varies on regional length scales. The structure of the inner core is not well constrained at depths of 0 – 15 km, and 100 - 200 km beneath the inner core boundary. This is because several seismic waves arrive at the same time and interfere. In order to separate and identify the phases, we use a combination of array stacking techniques and synthetic seismogram modeling. We extract the arrival times of several P waves which travel in similar paths through the mantle. Consequently, the measured arrival times then allow us to explore the seismic velocity structure. We initially focus on the region in the vicinity of the hemisphere boundary beneath the Pacific Ocean, which has previously been observed to display complicated lateral variations. Our results will allow us to better constrain the evolution of the hemispheres and anisotropy with depth and hence over time.

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