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We model P and SH waveforms at regional and teleseismic distances from the 30 May 2015 Bonin deep earthquake (depth 664km, Mw7.8; USGS), investigating the rupture propagation and the depth of the 660-km discontinuity. The results suggest that seismic waves from a 660-km discontinuity below the source region cannot be needed. A significant, subhorizontal 660-km discontinuity could not be located below the source region. Seismic waves from the Bonin earthquake were recorded by a number of broadband stations in a wide range of distance around the world, which include many Japanese stations at regional distances. Along with data collected by IRIS DMC, we use data recorded by F-net in Japan. Because high-frequency waves, which could be associated with the descending Pacific slab, were observed in eastern Japan, we use F-net data only from western Japan. The P and SH waves in western Japan have an apparently long duration, consisting of pulses. Because the distance of the stations ranges from 7 to 16 degrees, the 660-km discontinuity may affect the waveforms, depending on its depth. Changing the depth in the velocity model iasp91, we perform waveform inversion for spatiotemporal distribution of moment release on a plane, based on the method of Kuge (2003, 2010). Results from P waves show that the waveform fit becomes worse when the 660km-discontinuity is assumed below the source region. This is consistent with the observation of a simple pulse for P and SH waves from an aftershock.

