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**Does a depth variable sound-speed profile matter for SW06**  
**geoacoustic inversion?**

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This work will discuss the effects of depth variability for a sound-speed profile with regard to geoacoustic inversion on some simulated SW06 "data". First, broadband (400-800 Hz) simulated "data" are generated using RAMPE (by Collins) in the time domain for some short range (less than 1 km) SW06 scenarios. Next, the first 4 boundary reflection arrivals (from surface, bottom, surface-bottom, bottom-surface) are studied as a function of source range and depth, phone depth, and sound-speed variability. Finally, we examine the effects of sound-speed depth variability on geoacoustic inversion via MFP. We note that knowledge of array phone locations has a large impact on inversion capabilities.