Sensitivity of Rayleigh wave phase velocity to material properties

1. Phase velocity is more sensitive to shear velocity than to density or compressional velocity (see below).

2. Lower frequency Raleigh waves sense deeper structure (see below).

3. Phase velocity is most sensitive to shear velocity in elliptical region between source and receiver (see right).

from Snieder and Trampert, 1999

from Zhou et al., 2004