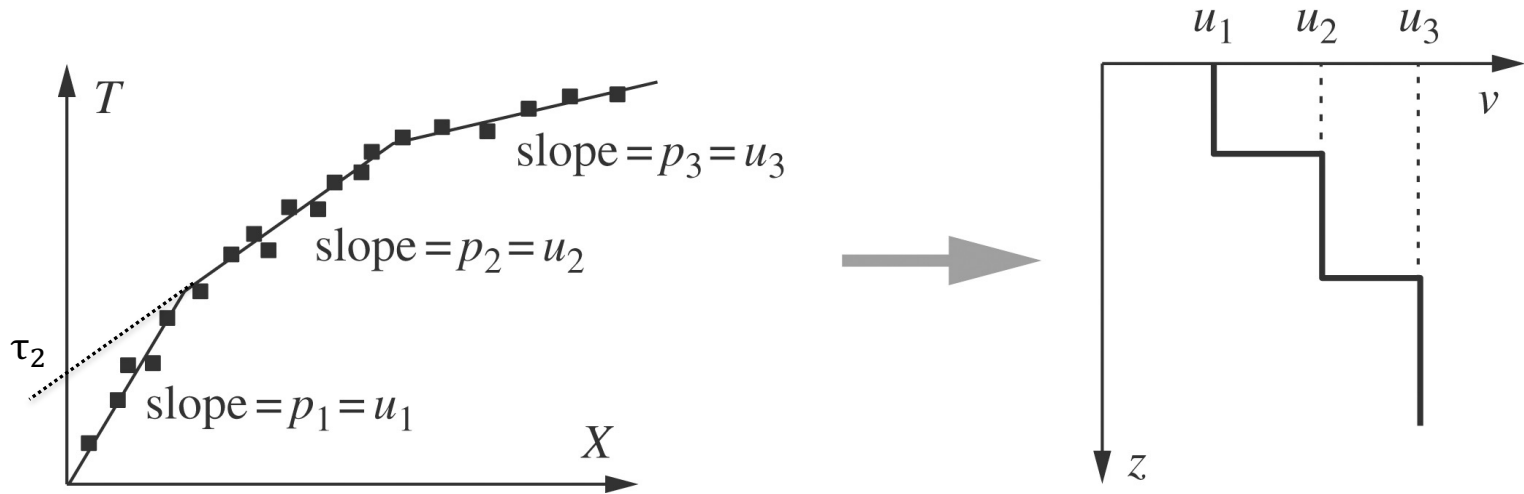


7. Traveltime inversion

M. Ravasi

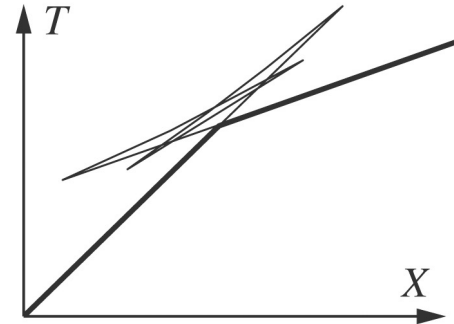
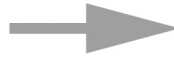
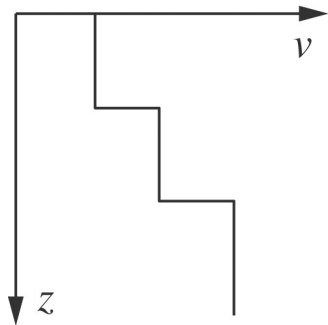
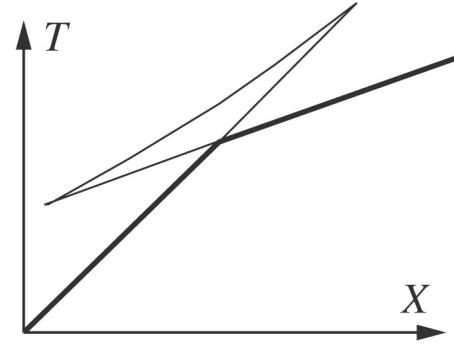
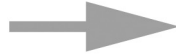
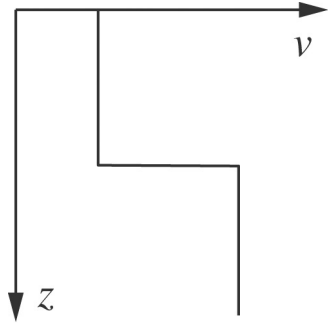
ERSE 210 Seismology

1D Inversion

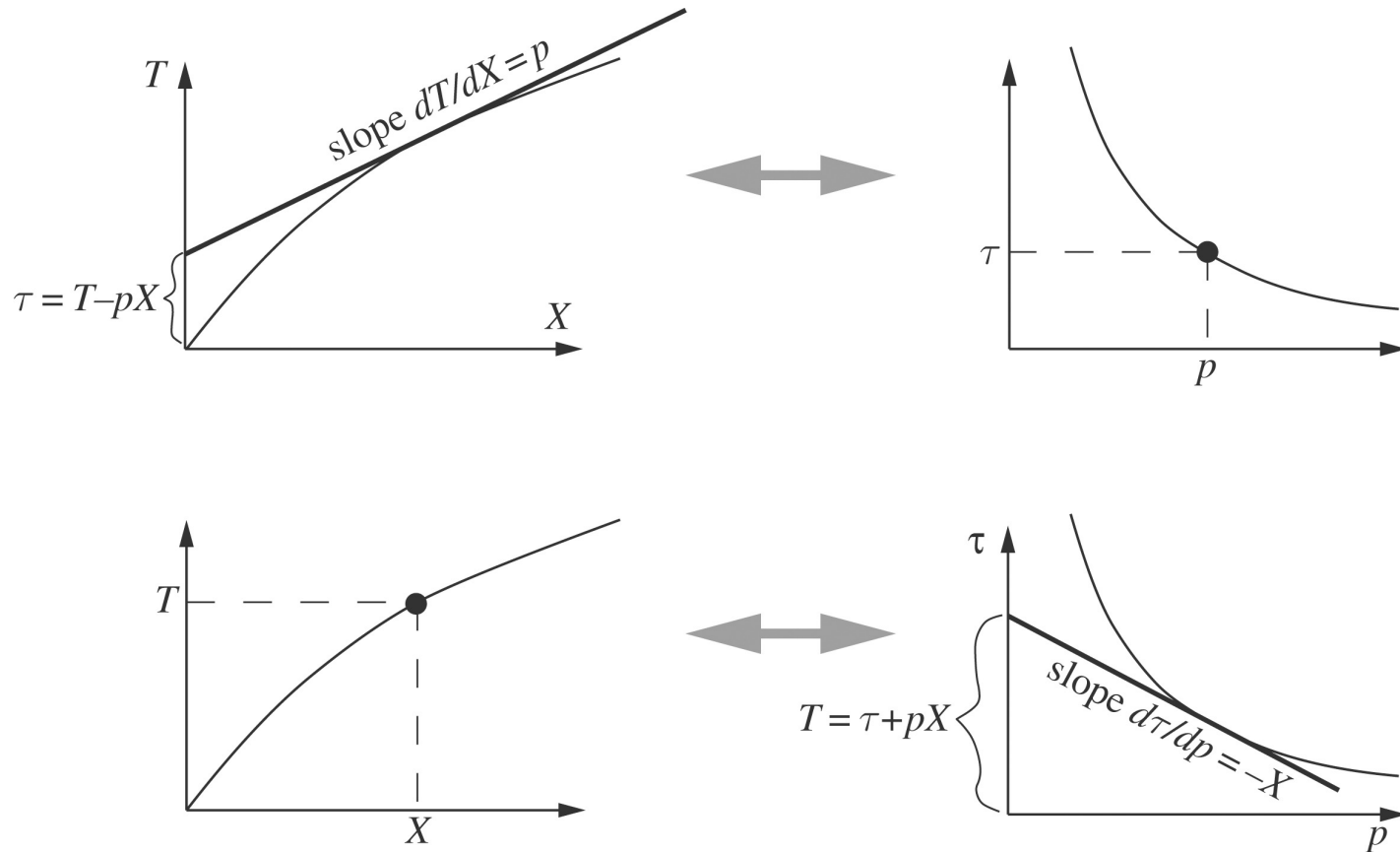


$$\tau(p_i) = 2 \sum_j \sqrt{u_j^2 - p_i^2} \Delta z_j, \quad u_j > p_i$$

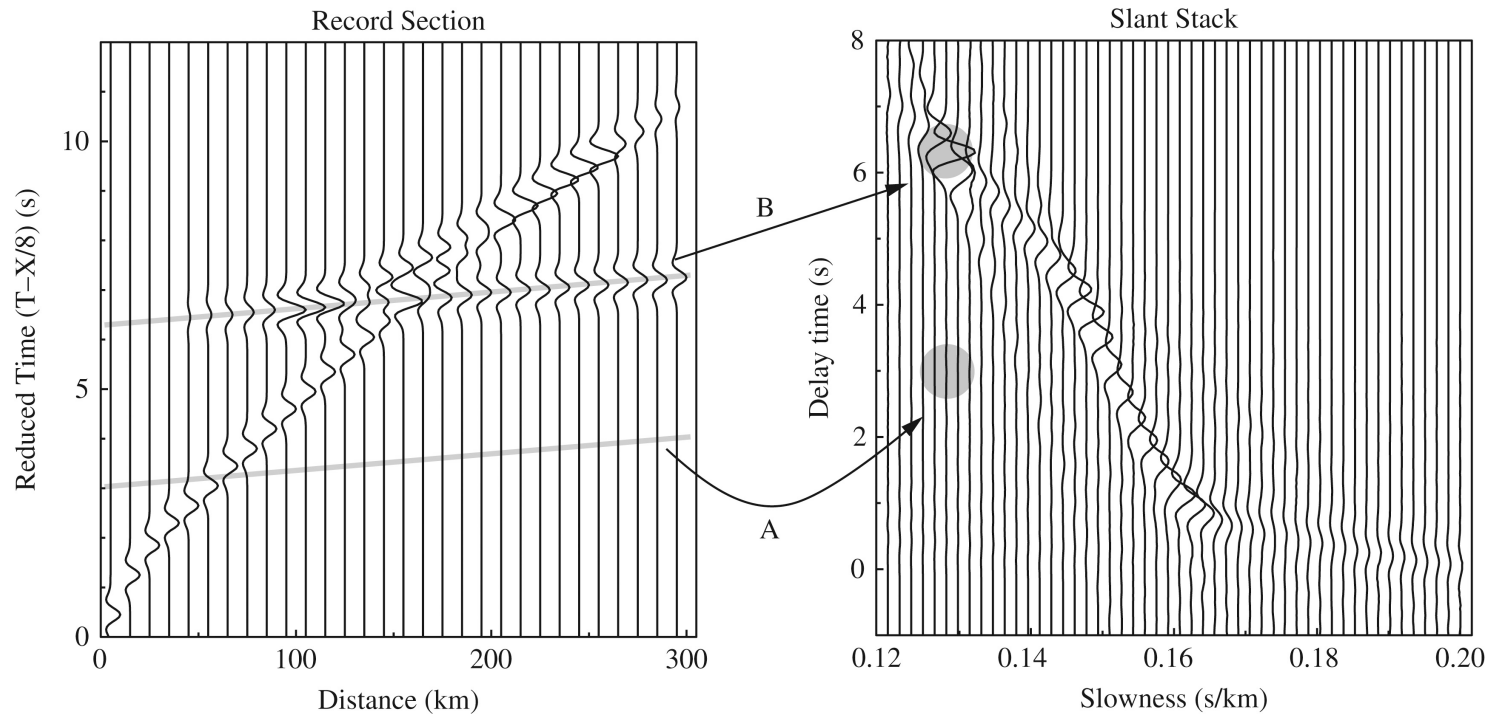
1D Non-uniqueness



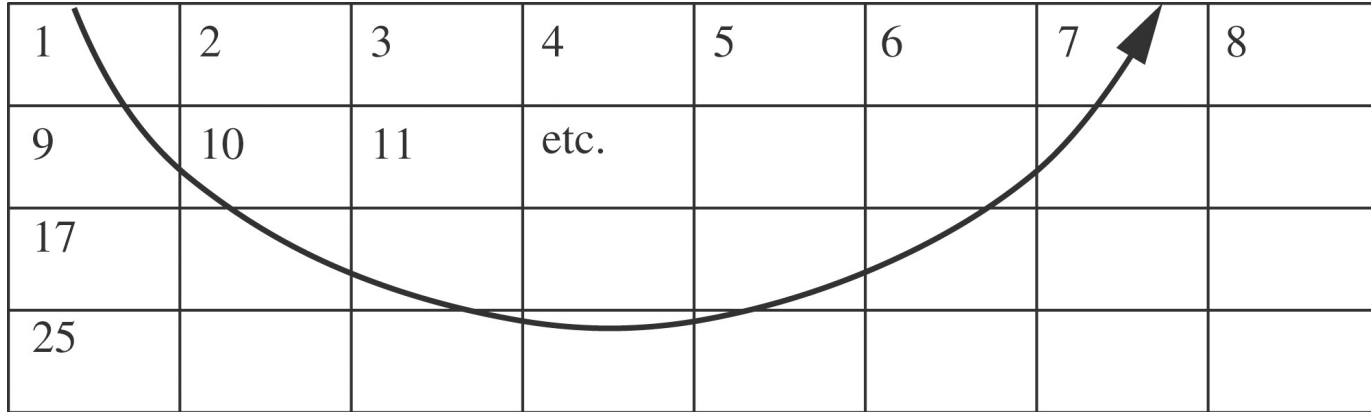
τ - p domain



Slant stack / Radon transform

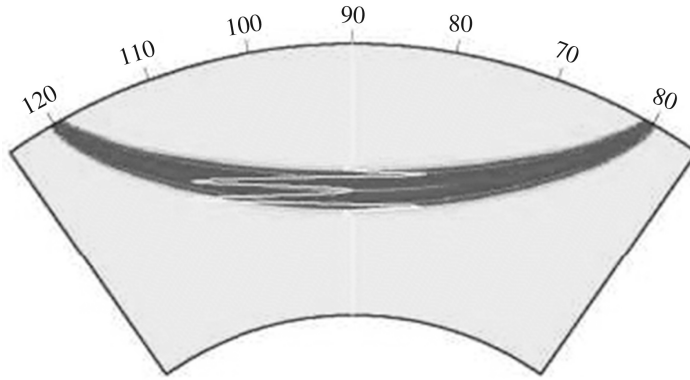


Seismic tomography

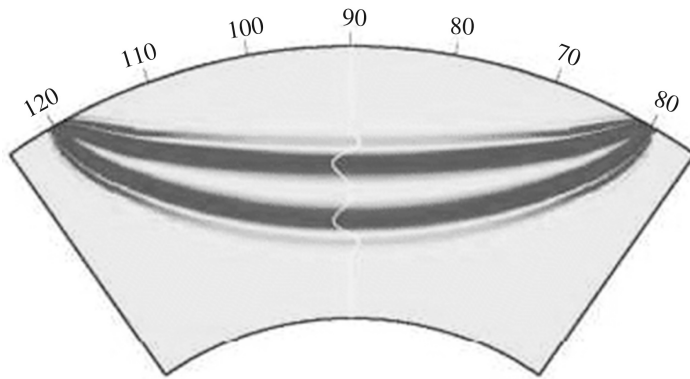
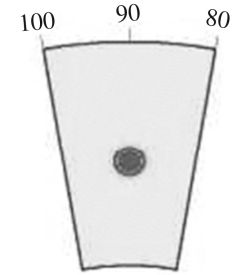


$$t = \int_l s \, dl$$

Finite-frequency tomography



period = 2 s



period = 20 s

