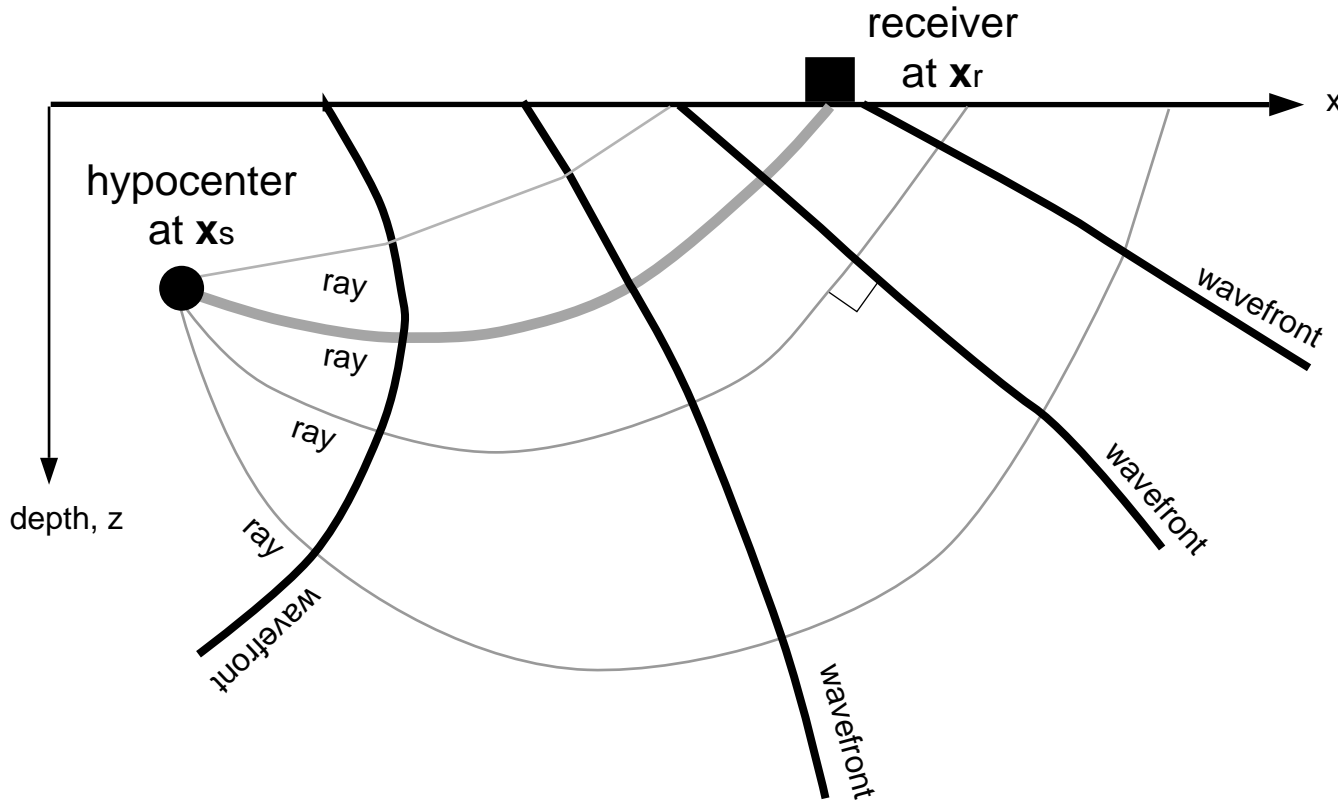
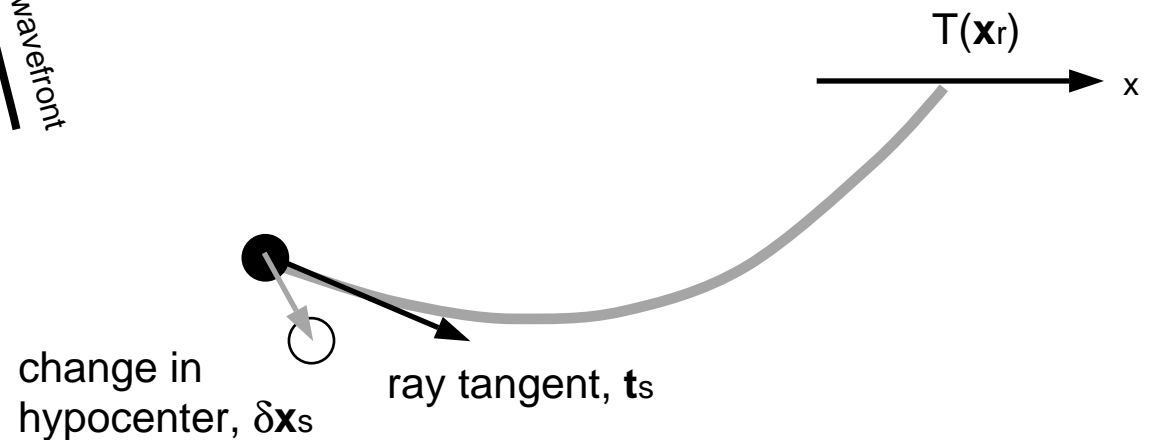


Earthquake Location using Geiger's Principle



How much does a small change in hypocentral location change the traveltime at a given station ?

Only the component of the change parallel to the ray direction matters.



$$\text{change in traveltime} = \delta T = \mathbf{t}_s \bullet \delta \mathbf{x}_s / V(\mathbf{x}_s)$$