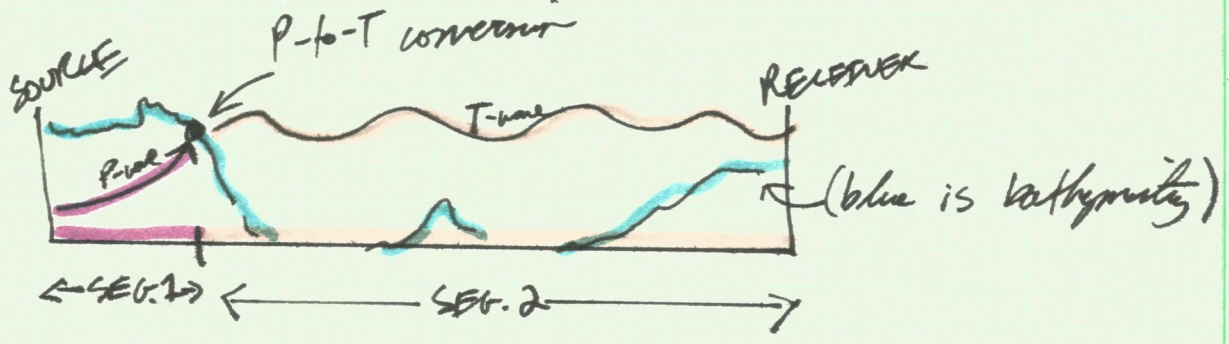
25-Mar-2024

hureya-travtimeadj.m

$$tt^* = tt + tt_{adj}$$

[negative] travel-time adj: to account for P-wave path

↑ travel time for full path @ C=T-wave



↑ p-to-t-wave conversion point @ dist = SEG. 1

SEG. 1: Travels @ P-wave

SEG. 2: Travels @ T-wave

because tt above assumes (incorrectly) full distance traveled as T

→ use: tt(velocity, distance)

$$\rightarrow tt^* = tt(T, \text{SEG. 1 \& SEG. 2}) + tt_{adj}$$

$$= tt(T, \text{SEG. 1\&2}) + [tt(P, \text{SEG. 1}) - tt(T, \text{SEG. 1})]$$

$$- tt(T, \text{SEG. 1}) + tt(T, \text{SEG. 2}) + tt(P, \text{SEG. 1}) - tt(T, \text{SEG. 1})$$

$$= tt(P, \text{SEG. 1}) + tt(T, \text{SEG. 2}) \checkmark$$

$$\therefore tt_{adj} = tt(P, \text{SEG. 1}) - tt(T, \text{SEG. 1})$$

(travel time @ 5800 m/s; travel time @ 1483 m/s)

To adjust the theoretical travel time of the T-wave, assuming a (e.g.) 1483 m/s from source to receiver, ADD the [negative] time difference for path from source to conversion @ P (5800 m/s) & T (1483 m/