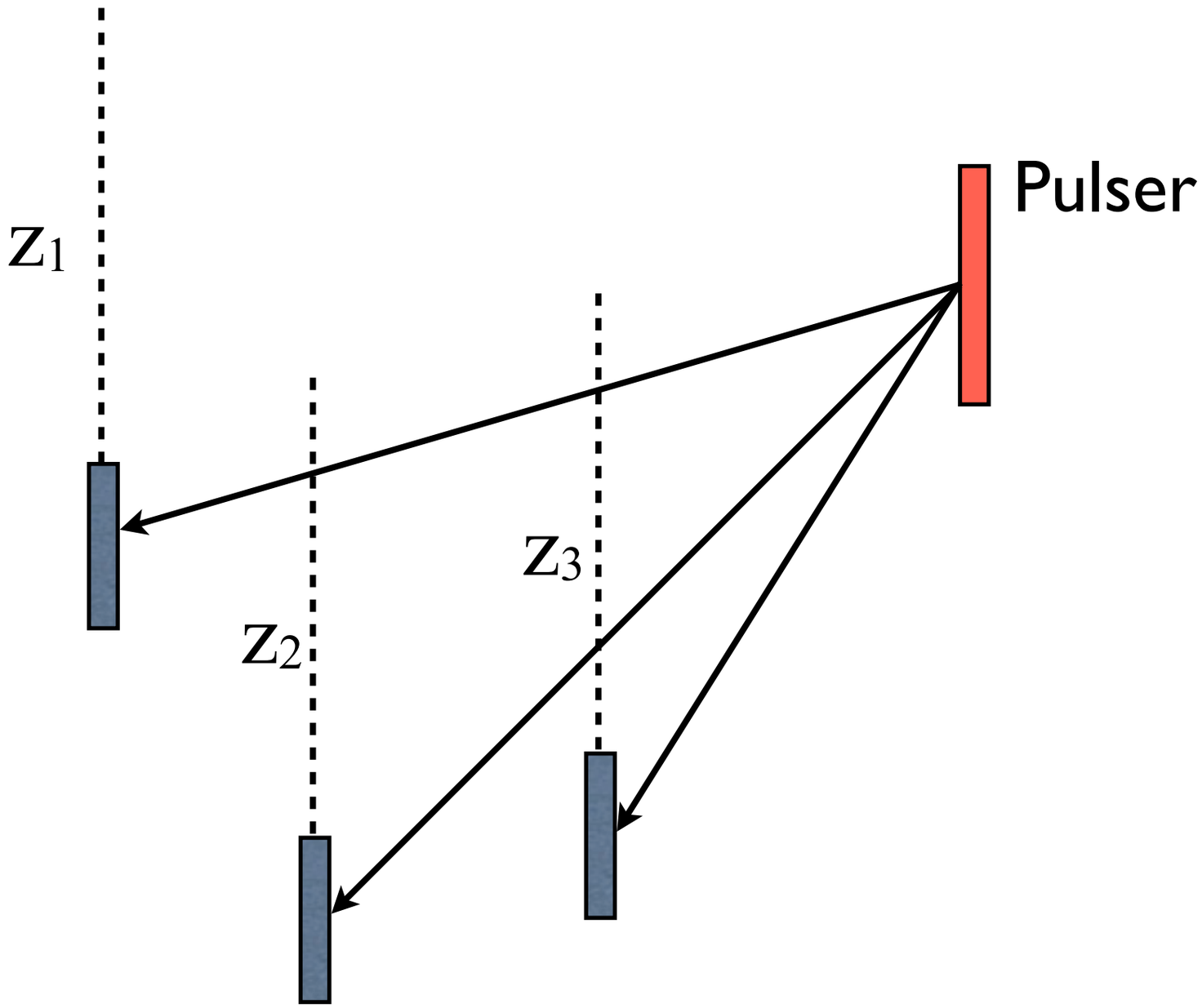
Why you need two pulsers at different depths ...


Pulser
z_1
z_2
z_3

$$\delta_{12} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+\Delta z_{1p}^2) - \mathrm{sqrt}(\Delta x_{2p}^2+\Delta y_{2p}^2+\Delta z_{2p}^2)}{(c/n)} + (\delta_1 - \delta_2)$$

$$\delta_{13} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+\Delta z_{1p}^2) - \mathrm{sqrt}(\Delta x_{3p}^2+\Delta y_{3p}^2+\Delta z_{3p}^2)}{(c/n)} + (\delta_1 - \delta_3)$$

... or ... grouped differently as ...

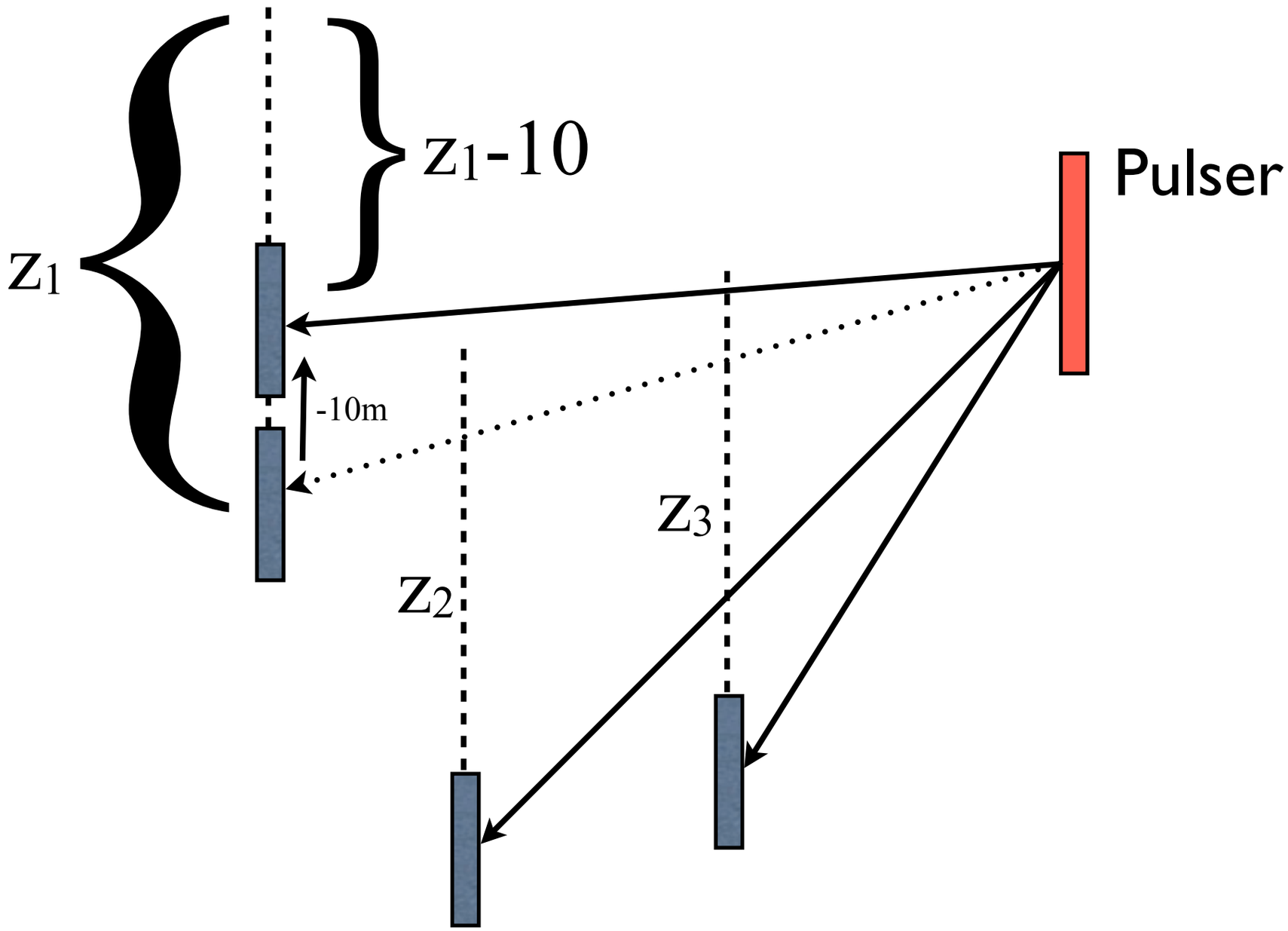
$$\delta_{12} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+\Delta z_{1p}^2)}{(c/n)} + \delta_1 - \frac{\mathrm{sqrt}(\Delta x_{2p}^2+\Delta y_{2p}^2+\Delta z_{2p}^2)}{(c/n)} + \delta_2$$

... and likewise for δ_{13}

$$\delta_{12} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+\Delta z_{1p}^2)}{(c/n)} + \delta_1 - \frac{\mathrm{sqrt}(\Delta x_{2p}^2+\Delta y_{2p}^2+\Delta z_{2p}^2)}{(c/n)} + \delta_2$$

$$\delta_{13} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+\Delta z_{1p}^2)}{(c/n)} + \delta_1 - \frac{\mathrm{sqrt}(\Delta x_{3p}^2+\Delta y_{3p}^2+\Delta z_{3p}^2)}{(c/n)} + \delta_3$$

... now shift an antenna up by 10m ...


z_1-10
z_1
Pulser
-10m
z_3
z_2

$$\delta_{12} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+[\Delta z_{1p}-10.0]^2)}{(c/n)} + \delta_1 - \frac{\mathrm{sqrt}(\Delta x_{2p}^2+\Delta y_{2p}^2+\Delta z_{2p}^2)}{(c/n)} + \delta_2$$

$$\delta_{13} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+[\Delta z_{1p}-10.0]^2)}{(c/n)} + \delta_1 - \frac{\mathrm{sqrt}(\Delta x_{3p}^2+\Delta y_{3p}^2+\Delta z_{3p}^2)}{(c/n)} + \delta_3$$

- OR -

$$\delta_{12} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+ [\Delta z_{1p}]^2)}{(c/n)} + [\delta_1 - \frac{10.0}{(c/n)}] - \frac{\mathrm{sqrt}(\Delta x_{2p}^2+\Delta y_{2p}^2+\Delta z_{2p}^2)}{(c/n)} + \delta_2$$

$$\delta_{13} = \frac{\mathrm{sqrt}(\Delta x_{1p}^2+\Delta y_{1p}^2+ [\Delta z_{1p}]^2)}{(c/n)} + [\delta_1 - \frac{10.0}{(c/n)}] - \frac{\mathrm{sqrt}(\Delta x_{3p}^2+\Delta y_{3p}^2+\Delta z_{3p}^2)}{(c/n)} + \delta_3$$

so cannot separate Δz from δt ever ...