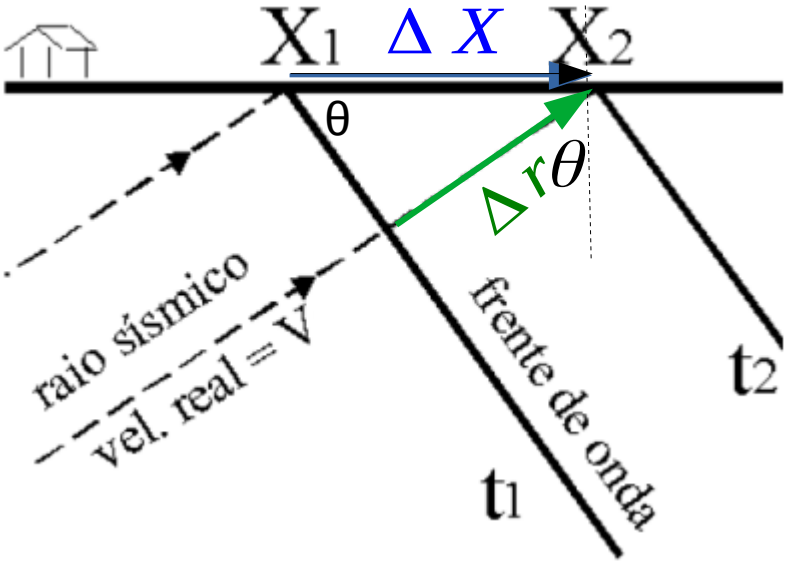
AGG0232

Material de apoio para a aula de 26/04/2023

Refração Crítica em uma Interface Inclinada – Parte 2: Velocidade Aparente

Profa. Liliana Alcazar



$$V_{real} = V_1 \left(\Delta_r \; é \; percorrido \; com \; V_1 \right)$$

Se o raio sísmico estiver retornando de uma refração crítica na primeira interface: $\theta = i_c = i_{12}$

$$V_{medida} = \frac{X_2 - X_1}{t_2 - t_1} = \frac{\Delta X}{\Delta t}$$

$$V_{medida} = V_{aparente} = V_{ap}$$

$$V_{real} = \frac{\Delta r}{\Delta t} \qquad sen(\theta) = \frac{\Delta r}{\Delta X}$$

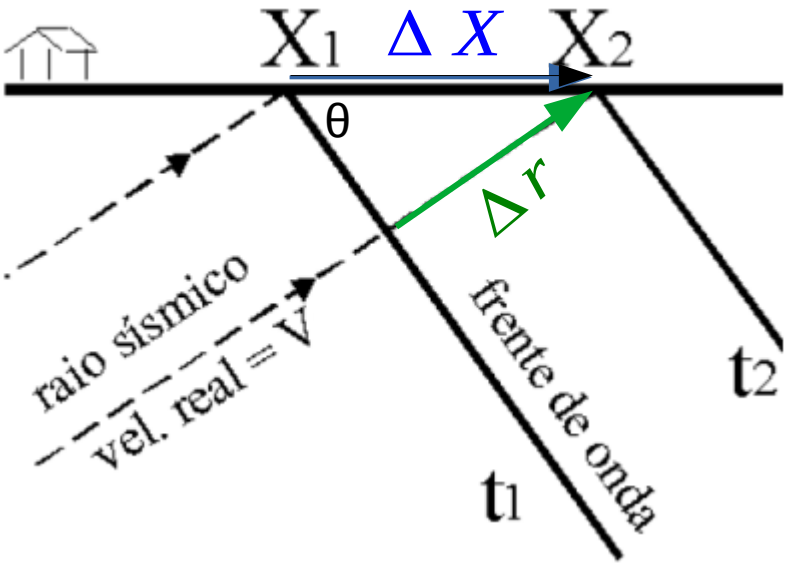
$$V_{real} = \frac{\Delta X \, sen(\theta)}{\Delta t} = sen(\theta) V_{medida}$$

$$V_{real} = sen(\theta) V_{ap}$$

$$\textbf{\textit{Lei de Snell}:} \quad sen(i_{12}) = \frac{V_1}{V_2}$$

$$V_{ap} = \frac{V_1}{sen(\theta)} = V_2$$

$$\frac{1}{V_{ap}} = \frac{sen(\theta)}{V_1} = \frac{1}{V_2}$$



$$V_{real} = V_1 \left(\Delta_r \text{ é percorrido com } V_1 \right)$$

Se o raio sísmico estiver retornando de uma refração crítica na primeira interface: $\theta = i_c = i_{12}$

$$V_{medida} = \frac{X_2 - X_1}{t_2 - t_1} = \frac{\Delta X}{\Delta t}$$

$$V_{medida} = V_{aparente} = V_{ap}$$

$$V_{real} = \frac{\Delta r}{\Delta t} \qquad sen(\theta) = \frac{\Delta r}{\Delta X}$$

$$V_{real} = \frac{\Delta X \, sen(\theta)}{\Delta t} = sen(\theta) V_{medida}$$

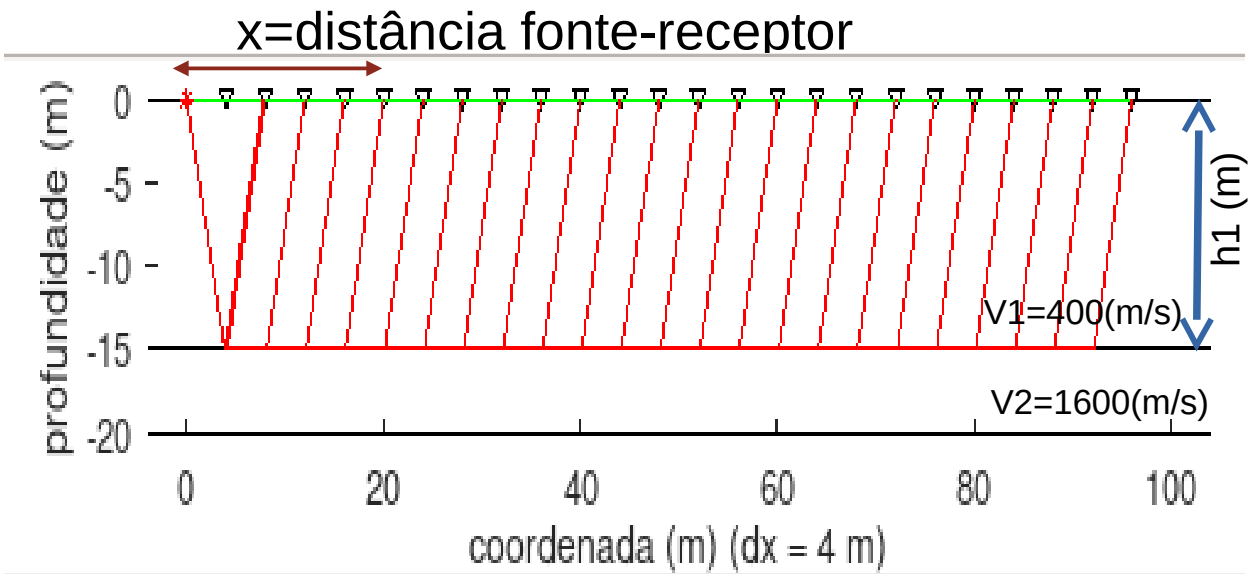
$$V_{real} = sen(\theta) V_{ap}$$

$$\textbf{Lei de Snell:} \quad sen(i_{12}) = \frac{V_1}{V_2}$$

$$V_{ap} = \frac{V_1}{sen(\theta)} = V_2$$

$$\frac{1}{V_{ap}} = \frac{sen(\theta)}{V_1} = \frac{1}{V_2}$$

$$t(x) = \frac{X}{V_2} + \frac{2h\cos(i_c)}{V_1}$$



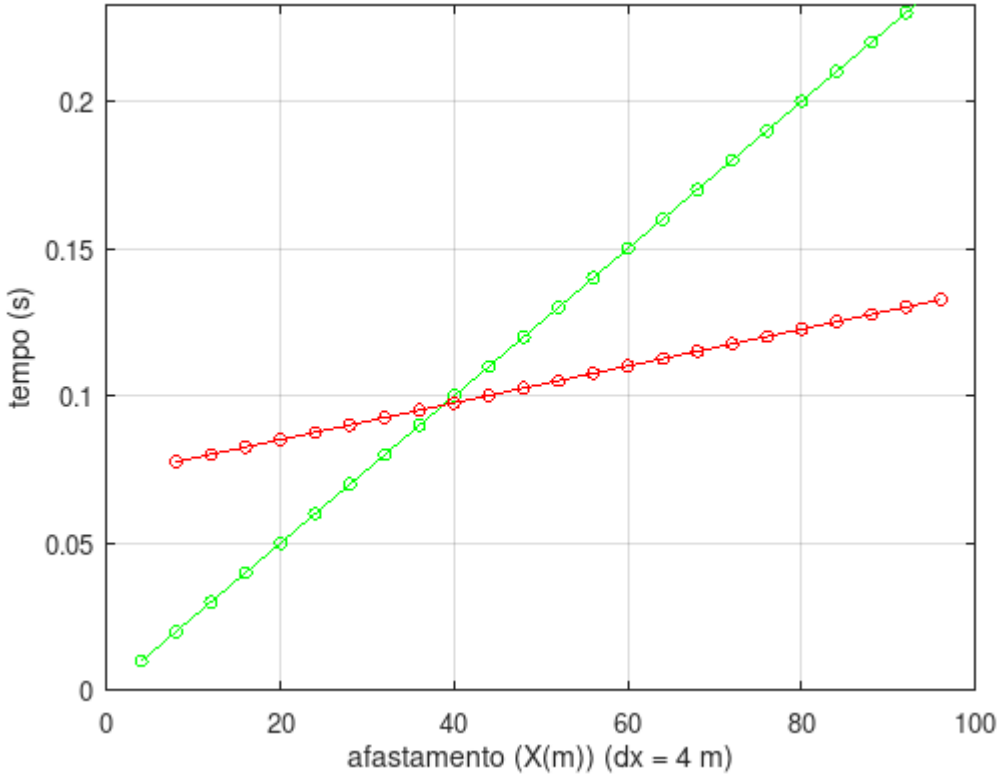
onda direta: $t(x)=\frac{X}{V_1}$

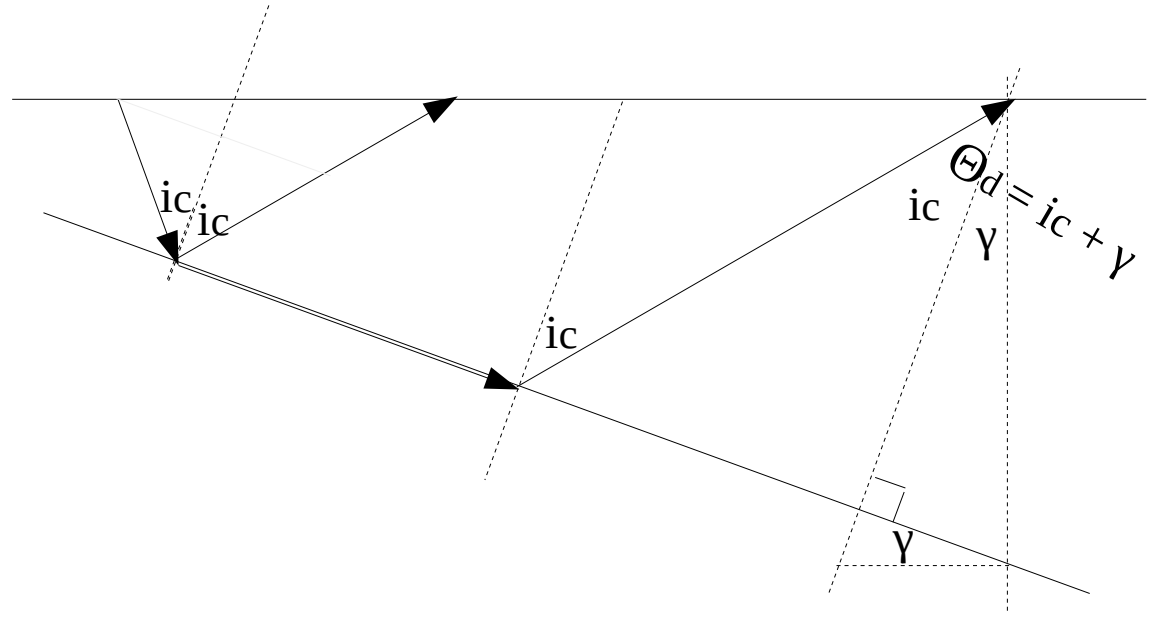
onda refratada:

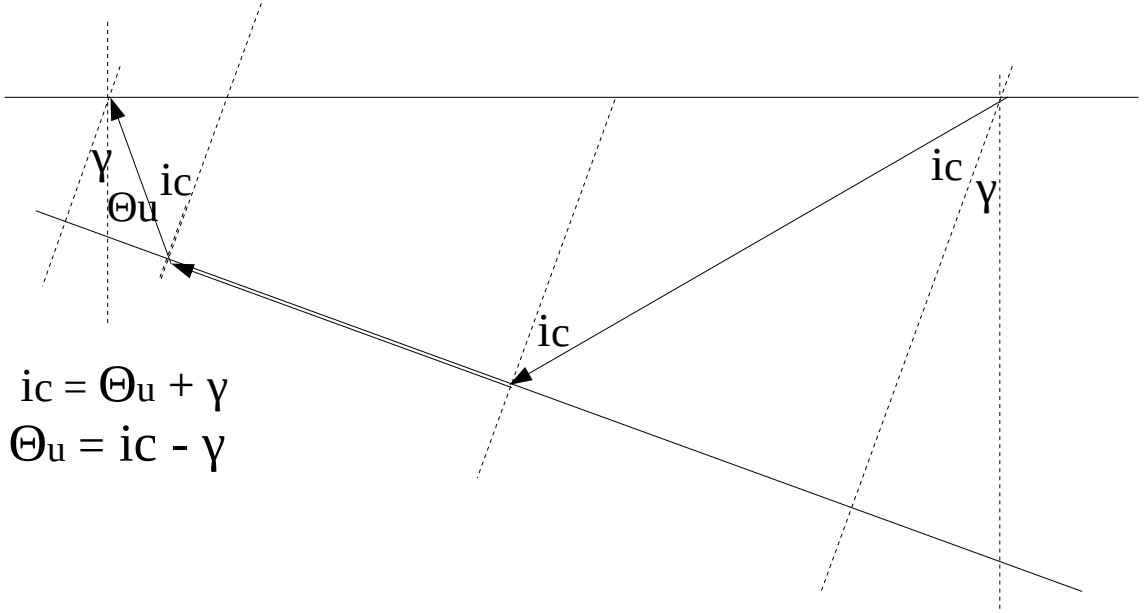
$$t(x)=\frac{X}{V_2}+\frac{2h\cos(i_c)}{V_1}$$

$$\frac{1}{V_{ap}}=\frac{sen(\theta)}{V_1}=\frac{1}{V_2}$$

Gráfico das curvas de tempo-distância das ondas direta e refratada





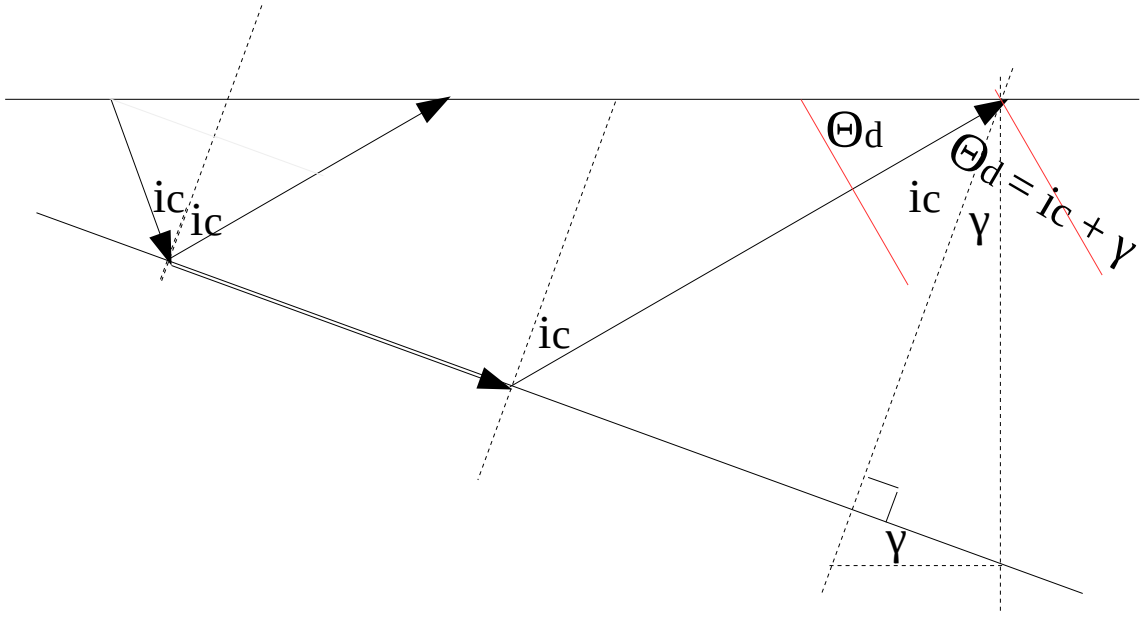


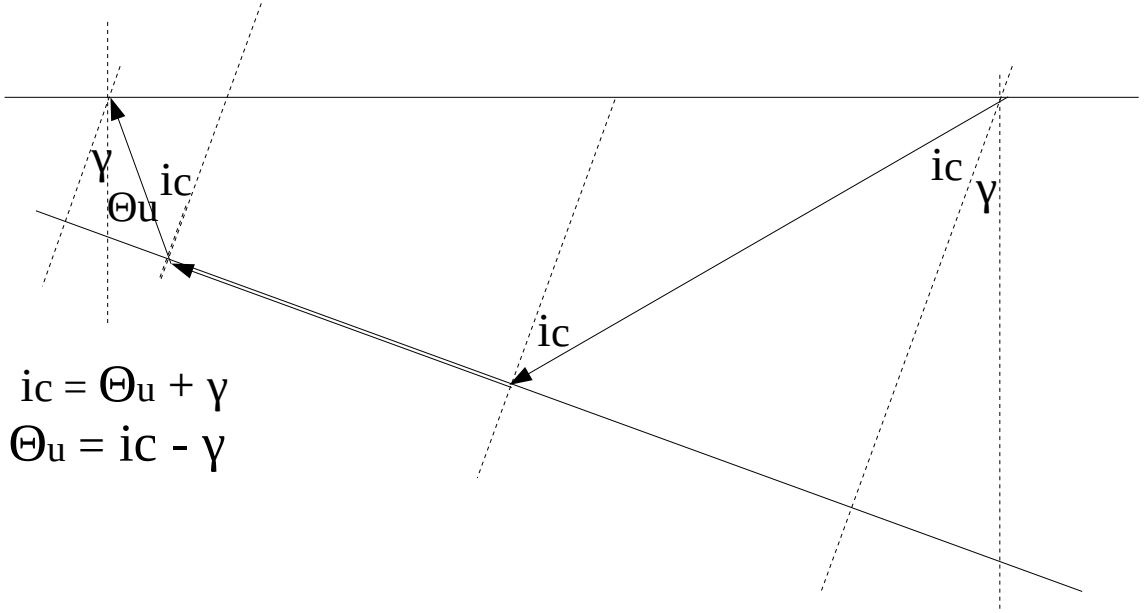
$ic = \Theta_u + \gamma$

$\Theta_u = ic - \gamma$

Determinem as velocidades aparentes (Vap) de chegada nos receptores quando a onda percorre o sentido:

- *dowdip* (Vd)
- *updip* (Vu)





Determinem as velocidades aparentes (Vap) de chegada nos receptores quando a onda percorre o sentido:

- *dowdip* (Vd)
- *updip* (Vu)