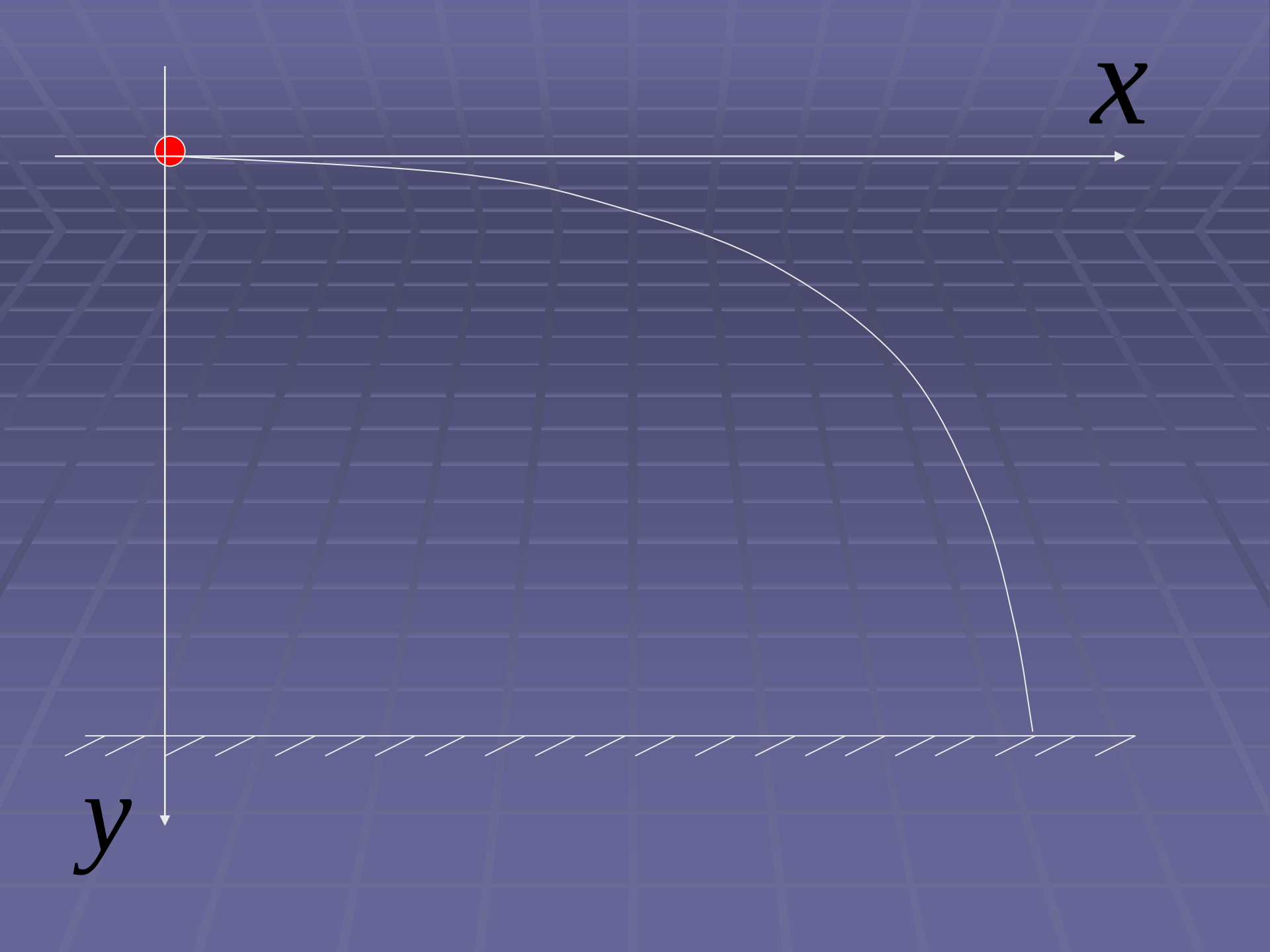
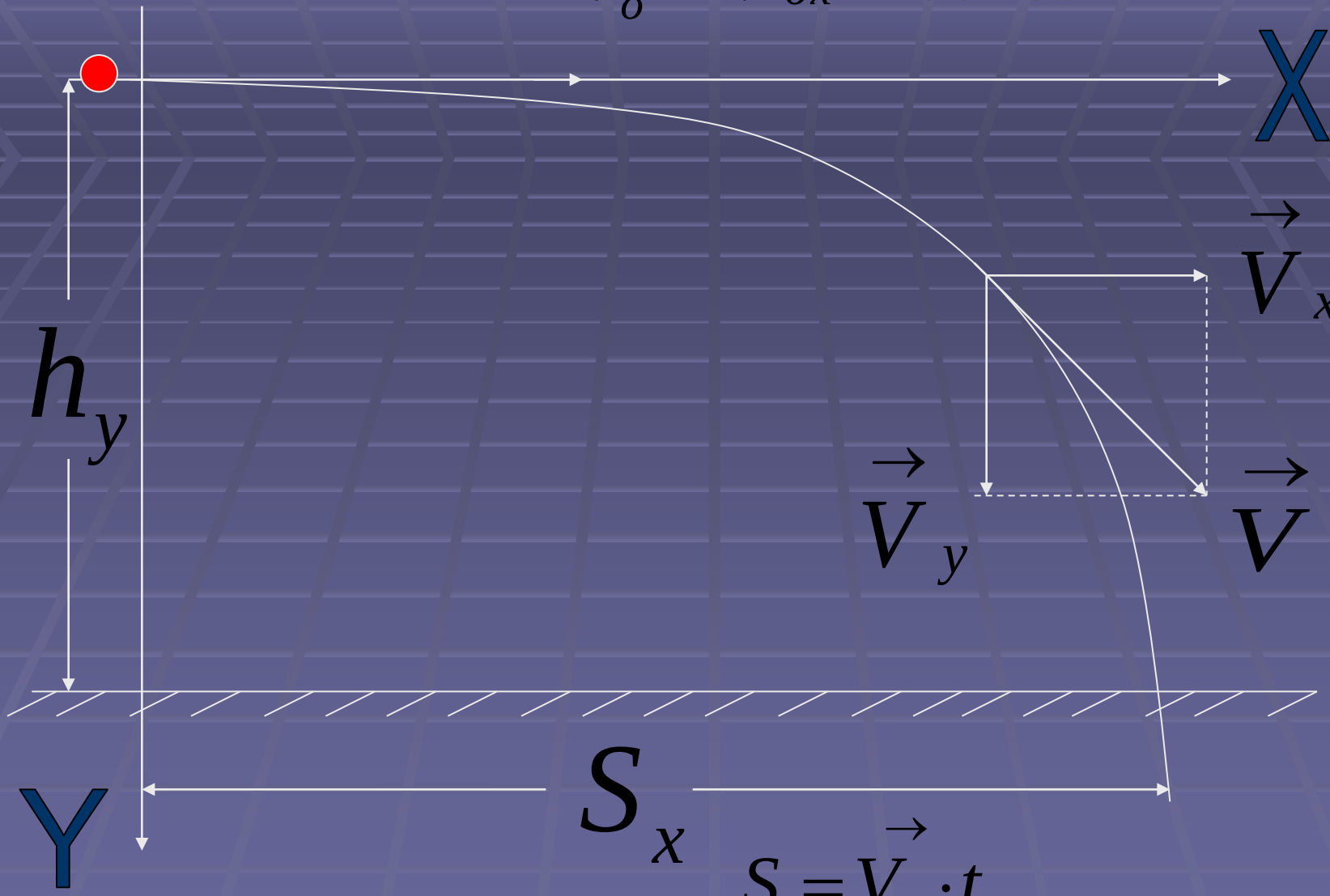

x
y

$$\vec{V}_o = \vec{V}_{ox} = const$$



$$S = \vec{V}_x \cdot t$$

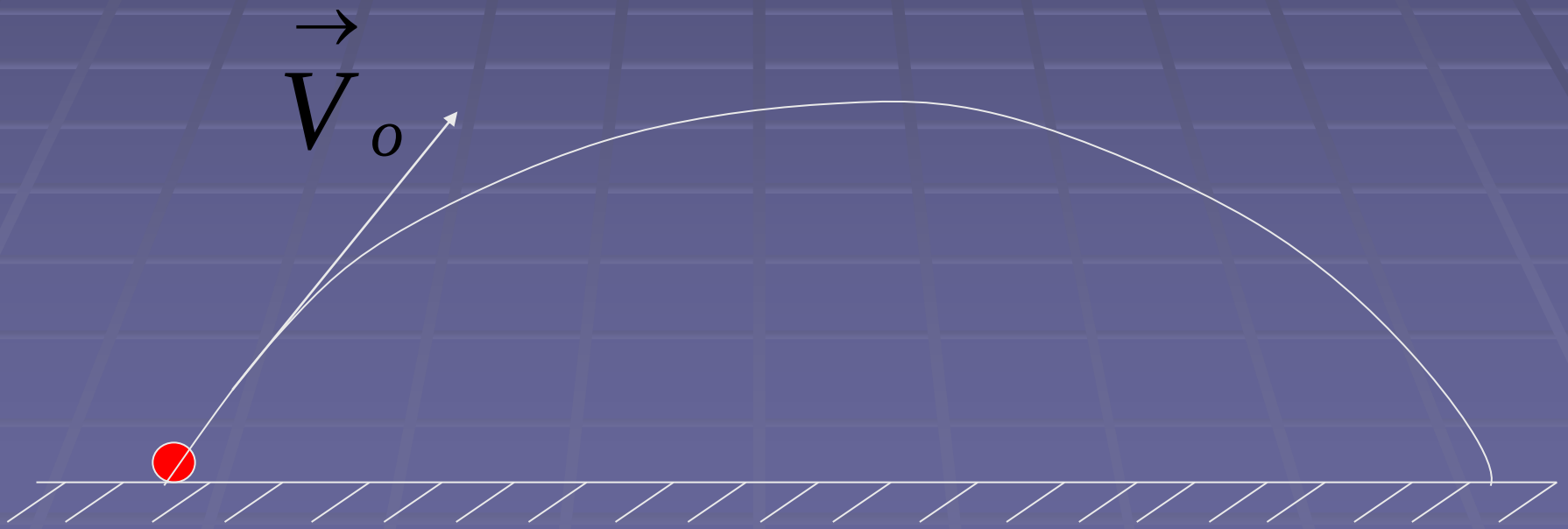
$$\vec{V}_x = \vec{V}_{ox} = \vec{V}_o \qquad S_x = V_x \cdot t = V_o \cdot \sqrt{\frac{2 \cdot h_y}{g}}$$

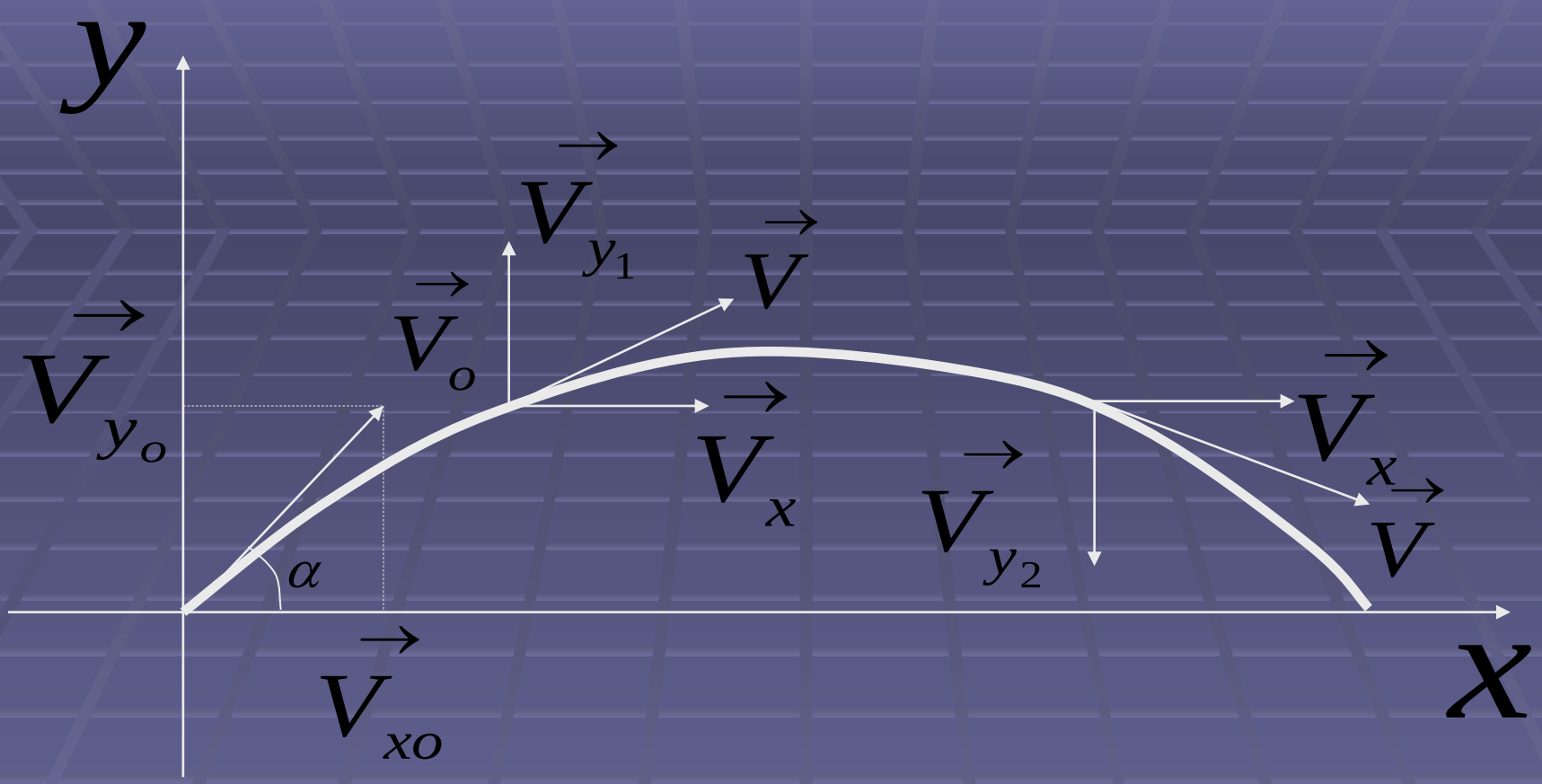
$$\vec{V}_y = \vec{V}_{oy} + g \cdot t$$

$$\vec{V}_{oy} = 0 \qquad h_y = \frac{g \cdot t^2}{2} \qquad t = \sqrt{\frac{2 \cdot h_y}{g}}$$

$$\vec{V}_y = g \cdot t$$

$$V = \sqrt{V_x^2 + V_y^2} = \sqrt{V_o^2 + g^2 t^2} = \sqrt{V_o^2 + 2gh_y}$$

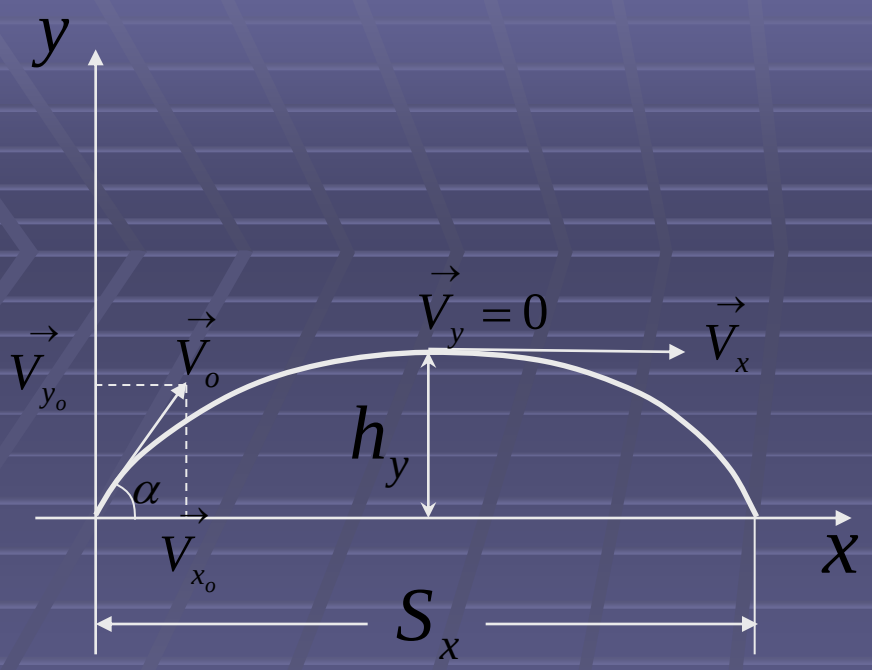

$\vec{V}_o$



$$\begin{cases} V_x = V_{x_o} = V_o \cdot \cos\alpha = const \\ V_{y_o} = V_o \cdot \sin\alpha \end{cases}$$

$$\begin{cases} V_x = V_{x_o} = V_o \cdot \cos\alpha \\ V_y = V_{y_o} - g \cdot t = V_o \cdot \sin\alpha - g \cdot t \end{cases}$$

$$V = \sqrt{V_x^2 + V_y^2}$$


y
$\vec{V}_y = 0$
$\vec{V}_x$
$\vec{V}_o$
$\vec{V}_{y_o}$
h_y
α
$\vec{V}_{x_o}$
x
S_x