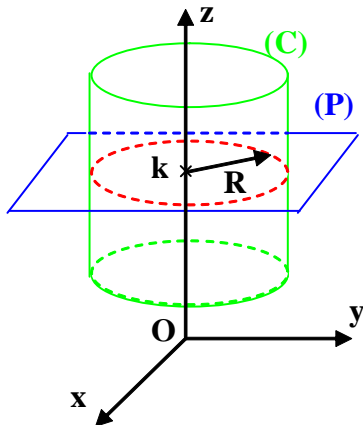


# SECTIONS PLANES DE SURFACES

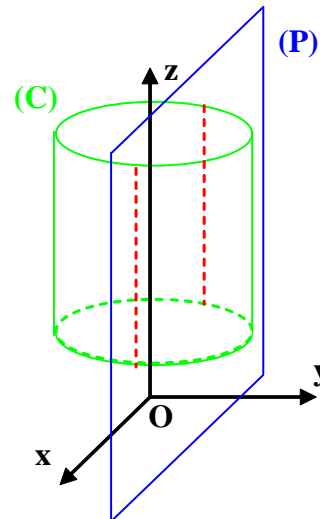
- Cylindre:



$$\begin{cases} (C): x^2 + y^2 = R^2 \\ (P): z = k \end{cases}$$

L'intersection est le cercle d'équation:

$$x^2 + y^2 = R^2$$



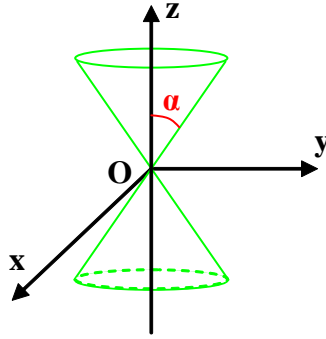
$$\begin{cases} (C): x^2 + y^2 = R^2 \\ (P): y = k \end{cases}$$

L'intersection est formée des deux droites d'équations:

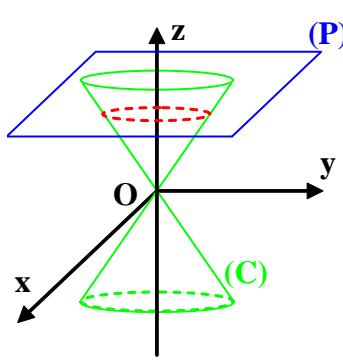
$$\begin{cases} x = \sqrt{R^2 - k^2} \\ y = k \\ z = t \end{cases} \quad \text{et} \quad \begin{cases} x = -\sqrt{R^2 - k^2} \\ y = k \\ z = t \end{cases}, t \in \mathbb{R}$$



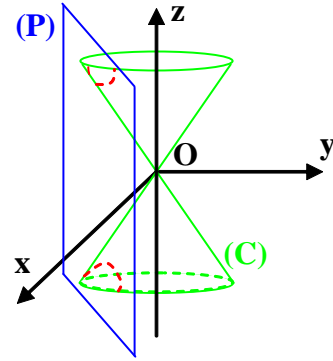
- Cône:



Equation du cône:  
 $x^2 + y^2 = z^2 \tan^2 \alpha$



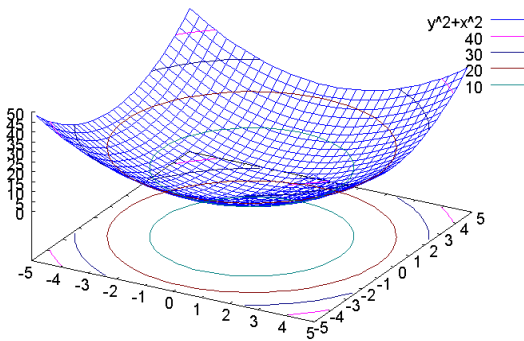
$$\begin{cases} (C): x^2 + y^2 = z^2 \tan^2 \alpha \\ (P): z = k \end{cases}$$
 L'intersection est le cercle  
 d'équation:  
 $x^2 + y^2 = k^2 \tan^2 \alpha$



$$\begin{cases} (C): x^2 + y^2 = z^2 \tan^2 \alpha \\ (P): y = k \end{cases}$$
 L'intersection est  
 l'hyperbole d'équation :  
 $X \cdot Y = k^2$   
 avec:  

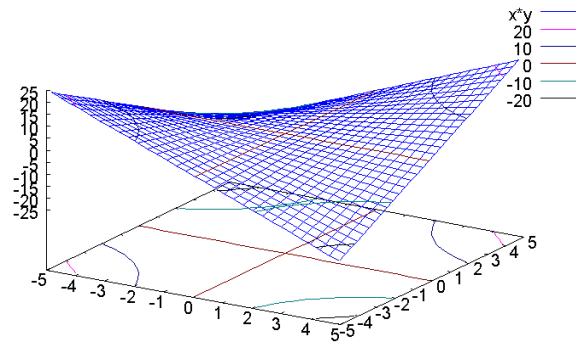
$$\begin{cases} X = z \tan \alpha - x \\ Y = z \tan \alpha + x \end{cases}$$

- Fonctions de deux variables: de la forme  $z = f(x,y)$



$$z = x^2 + y^2$$

Intersection avec les plans (P) :  $z = k$   
 ( $k > 0$ )  
 Cercles d'équation  $x^2 + y^2 = k$



$$z = xy$$

Intersection avec les plans (P) :  $z = k$   
 Hyperbole d'équation  $xy = k$

