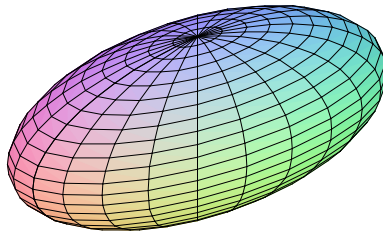


Les quadriques

▣ Quadriques générales

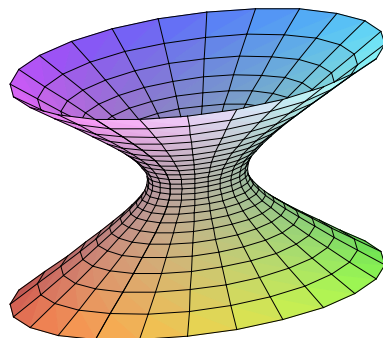
▣ Ellipsoïde

```
> plot3d([2*cos(u)*cos(v),sin(u)*cos(v),0.7*sin(v)],u=0..2*Pi,v=-Pi/2..Pi/2);
```



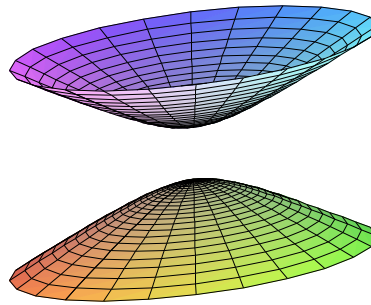
▣ Hyperboloïde à une nappe

```
> plot3d([2*cos(u)*cosh(v),sin(u)*cosh(v),0.7*sinh(v)],u=0..2*Pi,v=-2..2);
```



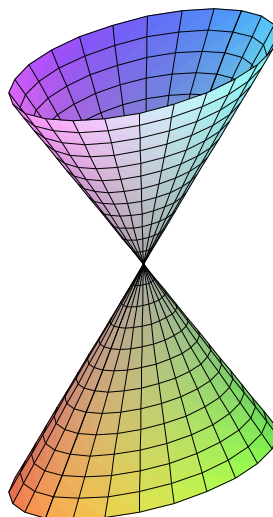
Hyperboloïde à deux nappes

```
> g1:=plot3d([2*cos(u)*sinh(v),sin(u)*sinh(v),0.7*cosh(v)],u  
=0..2*Pi,v=0..2):  
g2:=plot3d([2*cos(u)*sinh(v),sin(u)*sinh(v),-0.7*cosh(v)],  
u=0..2*Pi,v=0..2):  
plots[display3d](g1,g2);
```



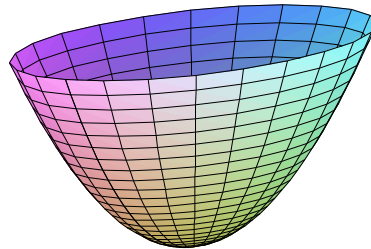
Cône du second degré

```
> plot3d([cos(u)*v,0.5*sin(u)*v,v],u=-Pi..Pi,v=-2..2);
```



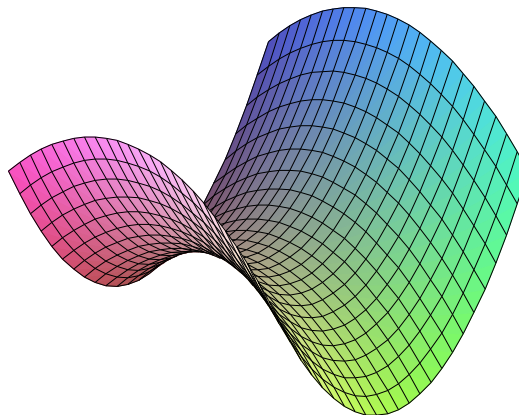
Paraboloïde elliptique


```
> plot3d([2*cos(u)*v,sin(u)*v,0.7*v^2],u=0..2*Pi,v=0..2);
```



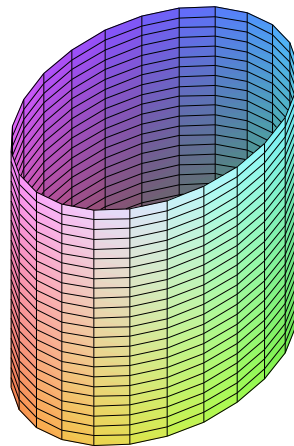
Parabolöide hyperbolique

```
> plot3d(u^2-0.5*v^2,u=-2..2,v=-2..2);
```



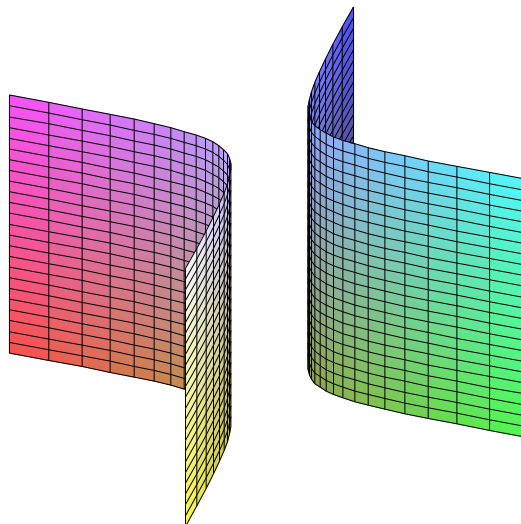
Cylindre elliptique

```
> plot3d([cos(u),0.7*sin(u),v],u=0..2*Pi,v=-1..1);
```

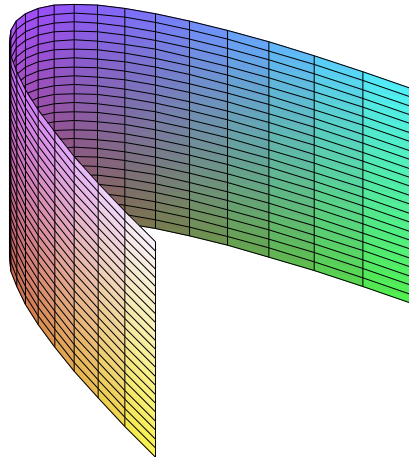
Cylindre hyperbolique

```
> g1:=plot3d([cosh(u),0.7*sinh(u),v],u=-2..2,v=-1..1):  
g2:=plot3d([-cosh(u),0.7*sinh(u),v],u=-2..2,v=-1..1):  
plots[display3d](g1,g2);
```



Cylindre parabolique

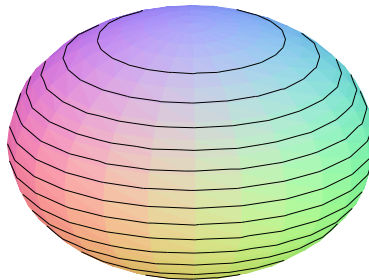
```
> plot3d([u,0.7*u^2,v],u=-2..2,v=-1..1);
```

[-] Quadriques de révolution

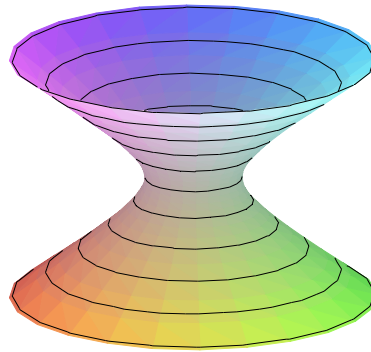
[-] Ellipsoïde de révolution

```
> plot3d([cos(u)*cos(v),sin(u)*cos(v),0.7*sin(v)],u=0..2*Pi,
v=-Pi/2..Pi/2);
```



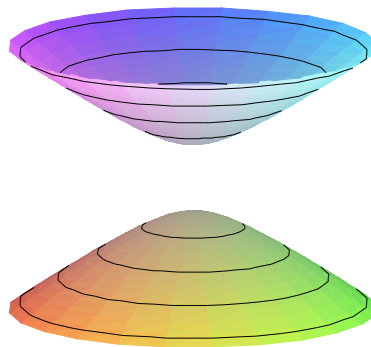
[-] Hyperboloïde à une nappe de révolution

```
> plot3d([cos(u)*cosh(v),sin(u)*cosh(v),0.7*sinh(v)],u=0..2*
Pi,v=-2..2);
```

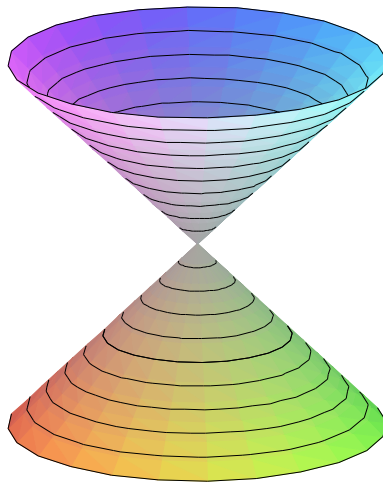
Hyperboloïde à deux nappes de révolution

```
> g1:=plot3d([cos(u)*sinh(v),sin(u)*sinh(v),0.7*cosh(v)],u=0
..2*Pi,v=0..2):
g2:=plot3d([cos(u)*sinh(v),sin(u)*sinh(v),-0.7*cosh(v)],u=
0..2*Pi,v=0..2):
plots[display3d](g1,g2);
```



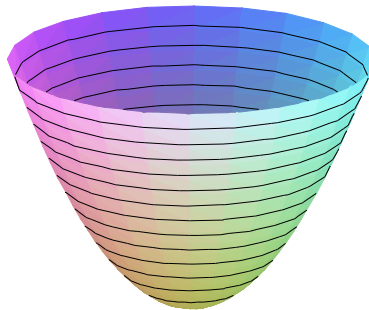
Cône de révolution

```
> plot3d([cos(u)*v,sin(u)*v,v],u=-Pi..Pi,v=-2..2);
```

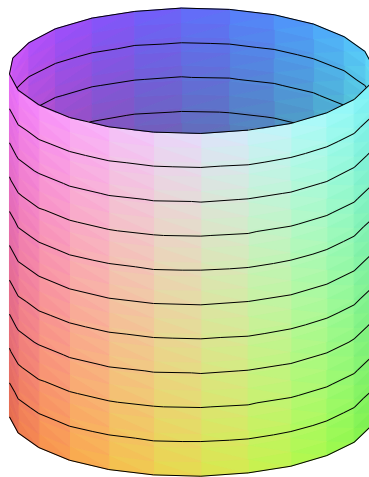
Paraboloidé de révolution

```
> plot3d([cos(u)*v,sin(u)*v,0.7*v^2],u=0..2*Pi,v=0..2);
```



Cylindre de révolution

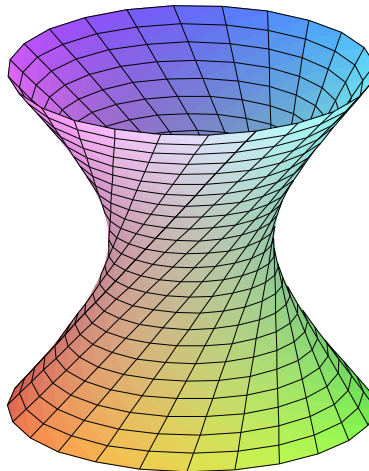
```
> plot3d([cos(u),sin(u),v],u=0..2*Pi,v=-1..1);
```

▣ Quadriques réglées

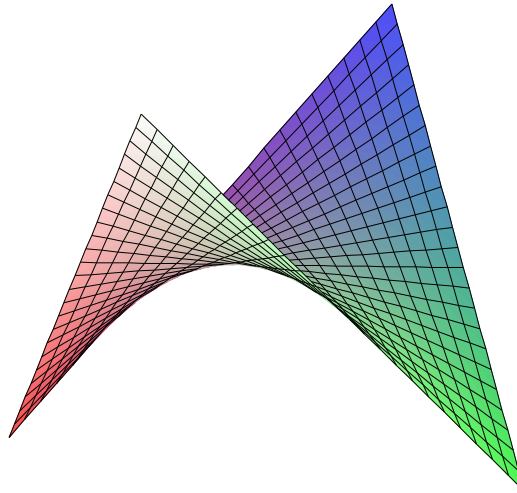
▣ Hyperboloïde à une nappe

```
> plot3d([cos(u)-v*sin(u),sin(u)+v*cos(u),v],u=0..2*Pi,v=-2.  
.2);
```



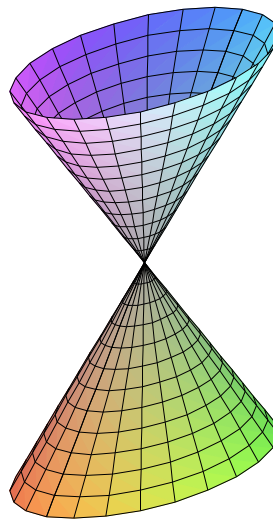
▣ Paraboloïde hyperbolique

```
> plot3d(u*v,u=-2..2,v=-2..2);
```

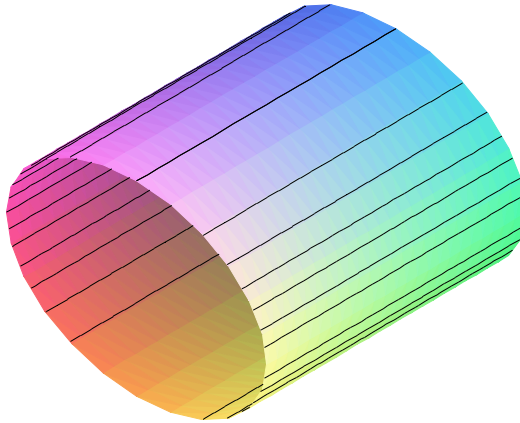
Cône du second degré

```
> plot3d([cos(u)*v,0.5*sin(u)*v,v],u=-Pi..Pi,v=-2..2);
```



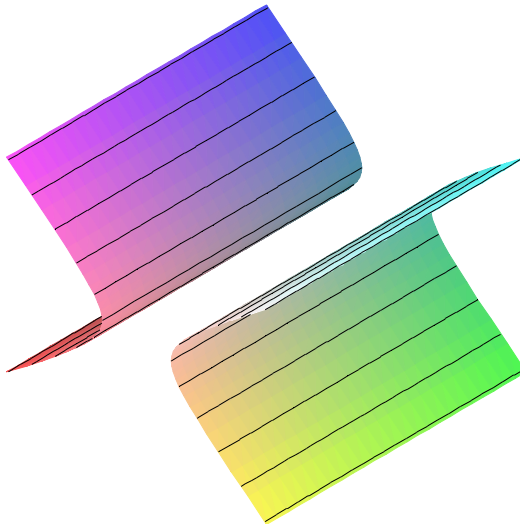
Cylindre elliptique

```
> plot3d([v,cos(u),0.7*sin(u)],u=0..2*Pi,v=-1..1);
```

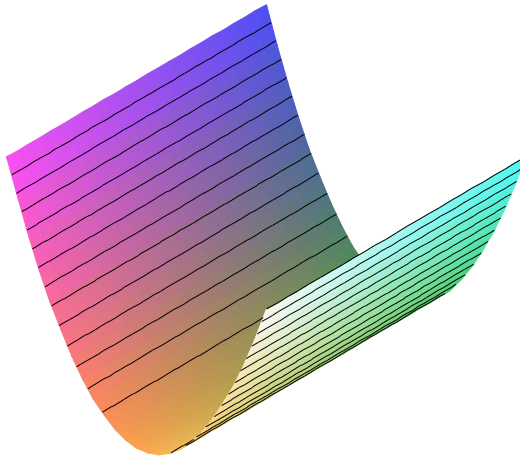
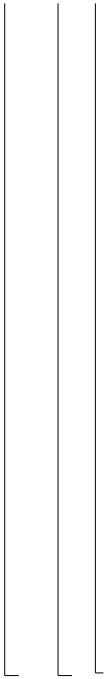
Cylindre hyperbolique

```
> g1:=plot3d([v,cosh(u),0.7*sinh(u)],u=-2..2,v=-1..1):
  g2:=plot3d([v,-cosh(u),0.7*sinh(u)],u=-2..2,v=-1..1):
  plots[display3d](g1,g2);
```



Cylindre parabolique

```
> plot3d([v,u,0.7*u^2],u=-2..2,v=-1..1);
```

Cours de mathématiques

par Denis Monasse

Ed. Vuibert

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