

Rundgang in *Mathematica*

■ Tour en *Mathematica*

(Nach Ideen aus: Handbuch "*Mathematica*" von S. Wolfram)

■ (Selon les idées prises dans le manuel "*Mathematica*" de S. Wolfram)

Run mit WIN+*Mathematica* Version 5.2

■ Testé avec *Mathematica* version 5.2+WIN

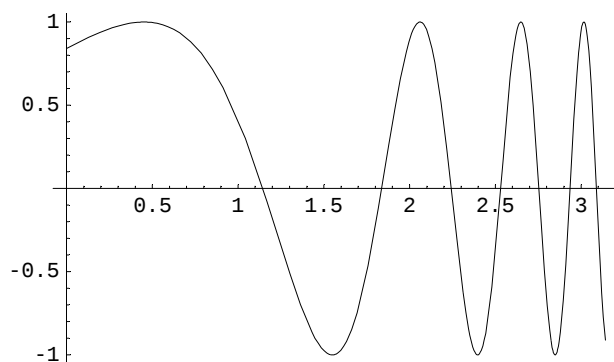
2. Graphiken

■ Graphiques

Graph einer Funktion

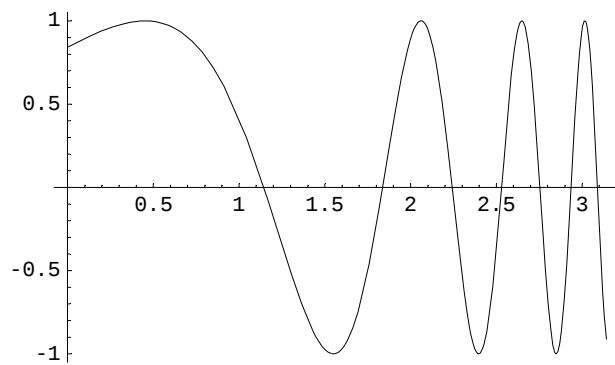
■ Graphe d'une fonction

```
In[1]:= Plot[Sin[Exp[x]], {x, 0, Pi}]
```



```
Out[1]= - Graphics -
```

```
In[2]:= Plot[Sin[Exp[x]], {x, 0, Pi}];
```



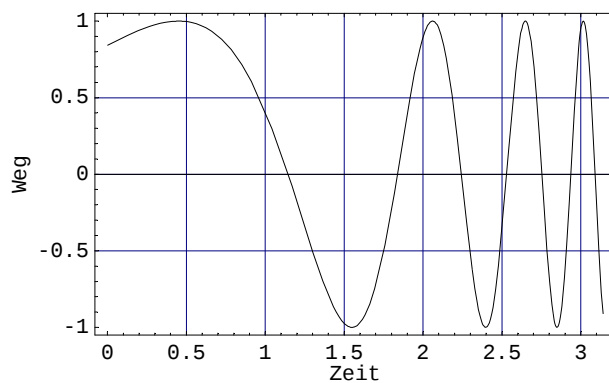
Was war der Unterschied?

■ Quelle était la différence?

Optionen zum Manipulieren von Plot

■ Options pour manipuler Plot

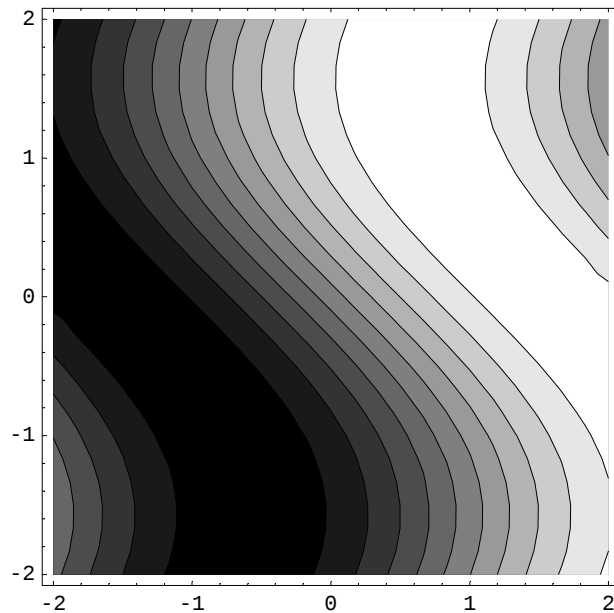
```
In[3]:= Show[%, Frame->True, FrameLabel->{"Zeit", "Weg"},  
GridLines->Automatic];
```



Höhenlinienkarte

■ Carte des courbes à niveau

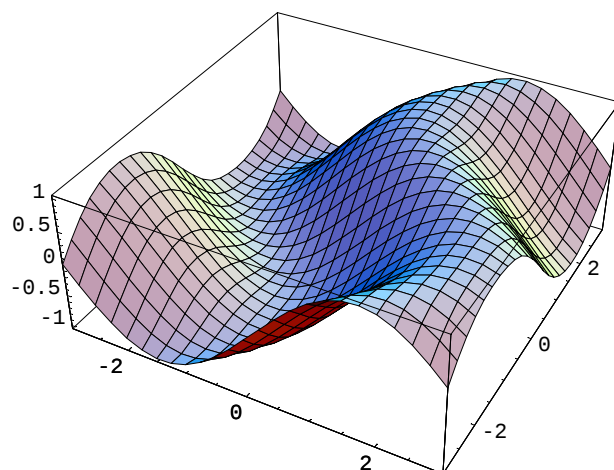
```
In[4]:= ContourPlot[Sin[x+Sin[y]],{x,-2,2},{y,-2,2}];
```



3-dimensionale Graphen

■ Graphes à 3 dimensions

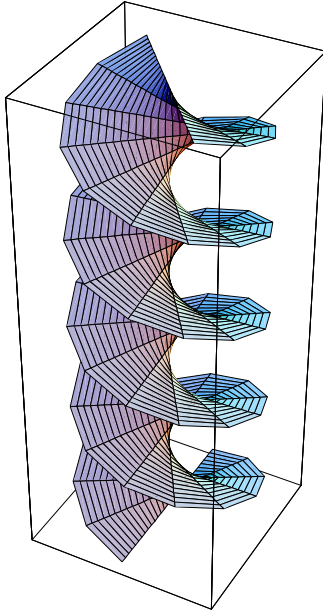
```
In[5]:= Plot3D[Sin[x+Sin[y]],{x,-3,3},{y,-3,3}];
```



3-dimensionale parametrisierte Flächen

■ Surfaces paramétrisées à 3 dimensions

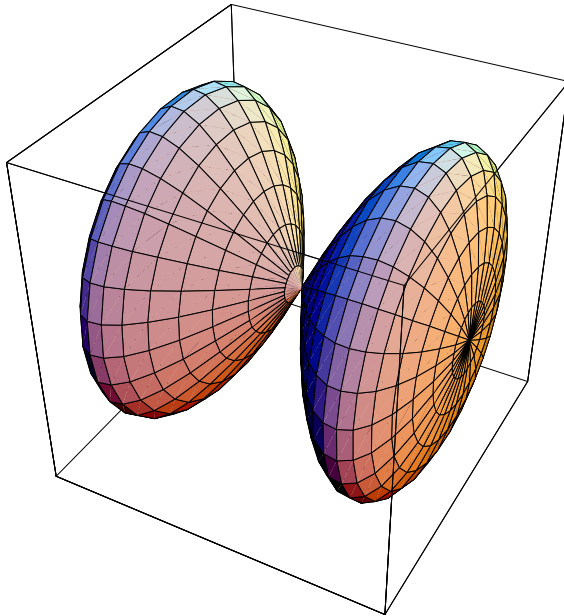
```
In[6]:= ParametricPlot3D[{u Sin[t], u Cos[t], t/3},  
  {t, 0, 15}, {u, -1, 1}, Ticks->None];
```



Oder vielleicht so

■ Ou peut-être ainsi

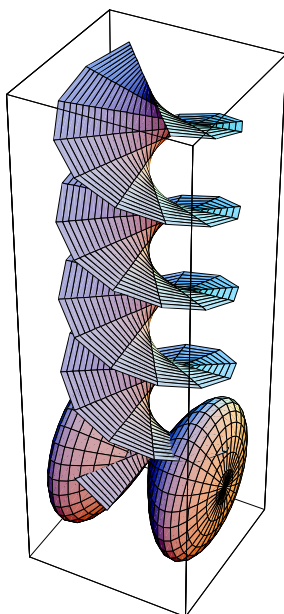
```
In[7]:= ParametricPlot3D[{Sin[t], Sin[2t] Sin[u], Sin[2t] Cos[u]},  
  {t, -Pi/2, Pi/2}, {u, 0, 2 Pi}, Ticks->None];
```



Die beiden letzten Graphen kombiniert

■ Les deux derniers graphes combinés

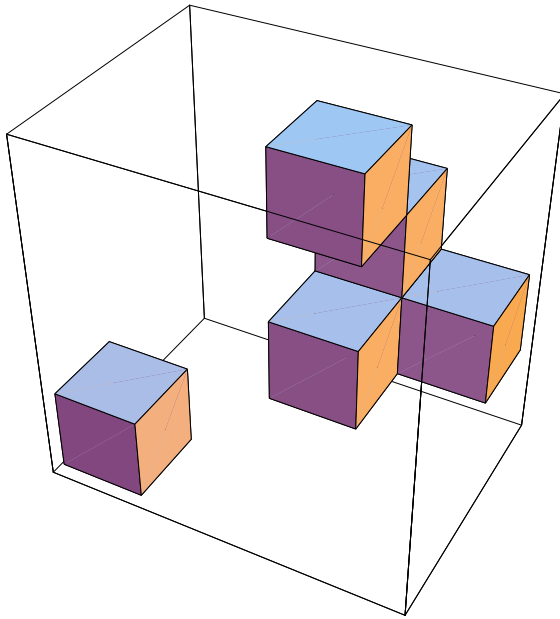
```
In[8]:= Show[%, %%];
```



Arbeit mit eingebauten Graphik-Komponenten

■ Travail avec des composantes de graphiques incorporées

```
In[9]:= Show[Graphics3D[  
  {Cuboid[{0,0,0}],Cuboid[{2,2,2}],  
   Cuboid[{2,1,3}],Cuboid[{3,2,1}],  
   Cuboid[{2,1,1}]} ]]
```



```
Out[9]= - Graphics3D -
```

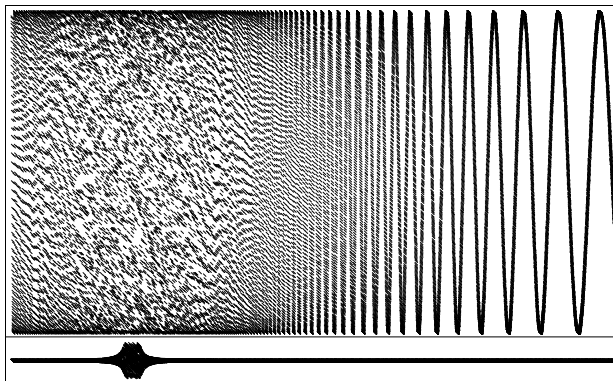
Musik

■ Musique

(Das hier dauert etwas lang, bitte warten)

■ (Cela dure peut-être longtemps, attendre s.v.p.)

```
In[10]:= Play[Sin[1000/t],{t,-4,16}]
```



Power::infty : Infinite expression $\frac{1}{0.}$ encountered. Mehr...

```
Out[10]= - Sound -
```

"Putzmaschine" einsetzen

■ Employer la "machine de nettoyage"

```
In[11]:= (* Old Form: Remove["Global`*"] *)
```

```
In[12]:= Remove["Global`*"]
```