# Drawing in LaTeX

# Inhaltsverzeichnis

## 0.1 Notizen

```
% Spezialpakete
\usepackage{tikz}
\usepackage{fp}
\usepackage{tikz}
\usepackage{xcolor}
% TikZ-Bibliotheken
\usetikzlibrary{arrows}
\usetikzlibrary{shapes}
\usetikzlibrary{decorations.pathmorphing}
\usetikzlibrary{decorations.pathreplacing}
\usetikzlibrary{decorations.shapes}
\usetikzlibrary{decorations.text}

Command:
\tikz[options]{tikz commands}
```

oder

```
\begin{tikzpicture}
   blabla
\end{tikzpicture}
```

- Innerhalb der tikzpicture-Umgebung keine leeren Zeilen!
- Wenn keine Grösse angegeben, werden die Werte in Klammern als *cm* interpretiert.
- Das Koordinatensystem beginnt in der unteren linken Ecke der Arbeitsfläche.
- Benutze nicht Einheiten, sondern skaliere das Gesamtbild. Und falls nötig, zeige den Rechteck der Arbeitsfläche an.

  ```
  \usetikzlibrary{backgrounds}
  \begin{tikzpicture}[scale=.8, show background rectangle]
  ```

- Falls Text in Nodes vorhanden ist: benutze

  ```
  \begin{tikzpicture}[scale=.9, transform shape]
  ```

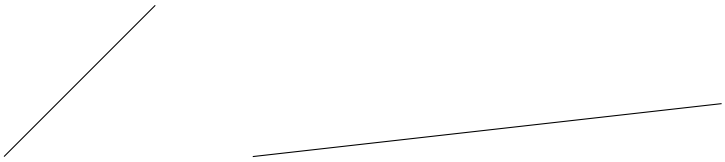
  Transform shape: Damit Node-Text mitskaliert wird.

## 0.2 Links

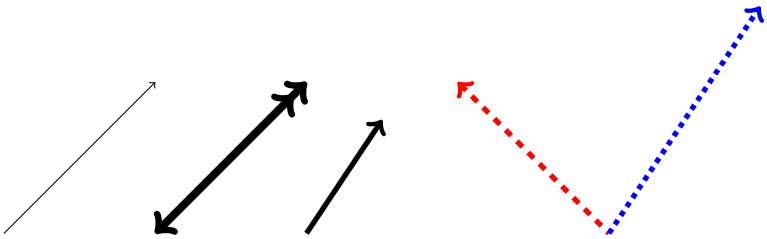
- http://www.math.uni-leipzig.de/~hellmund/LaTeX/pgf-tut.pdf
- http://www.math.tugraz.at/~huss/new/teaching/computermathematik09/dateien/tikz_demonstration.pdf http://www.texample.net/tikz/
- https://www.sharelatex.com/blog/2013/08/27/tikz-series-pt1.html

# 1 Basics

## 1.1 Gerade Linien zeichnen, relative Koordinaten



## 1.2 Pfeile



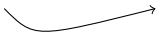

$\backslash draw[->]$


$\backslash draw[dotted, >->>]$


$\backslash draw[|<->|]$

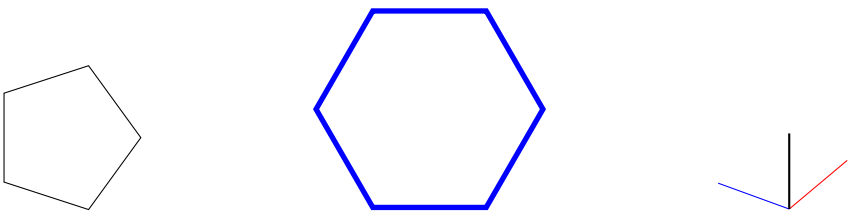

$\backslash draw[loosely\ dashed]$


$\backslash draw[densely\ dotted]$


$\backslash draw[->](0,0)..controls(.4,-.4)..(2,0)$

## 1.3 Polarkoordinaten; Geschlossene Figur

```
Polarkoordinaten: (winkel:radius). Winkel auch negativ möglich
Zum Anfangspunkt verbinden: -- cycle;
```



### 1.4 Einfache Figuren

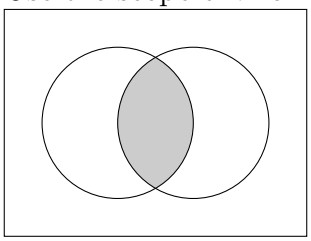
## 2 Komplexeres

### 2.1 Fills

### 2.2 Clipping und Scope

After a clip command, all subsequent drawings are clipped, only the parts inside the clipping region are drawn.

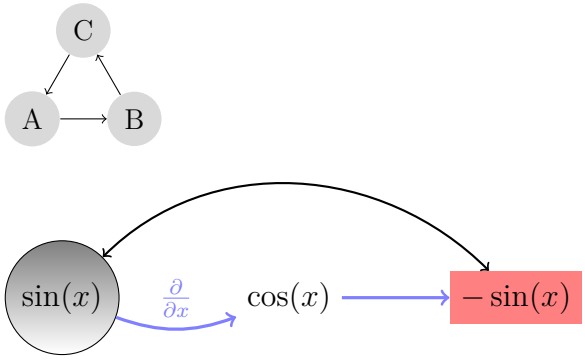
Use the scope environment to restrict the effect of clipping.



### 2.3 Kurvenlinien

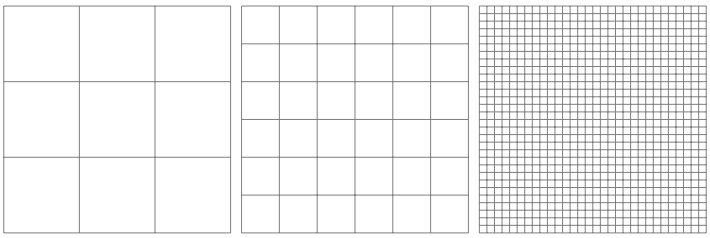
### 2.4 Nodes

```
\node[Options] (node name) at (x,y) {TeX content of node}
```

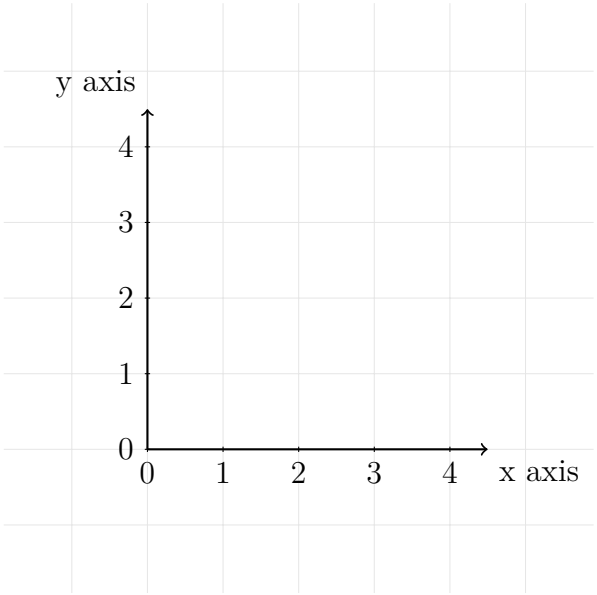



# 3 Varia

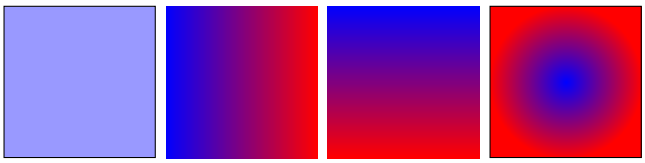
## 3.1 grid



## 3.2 Axes

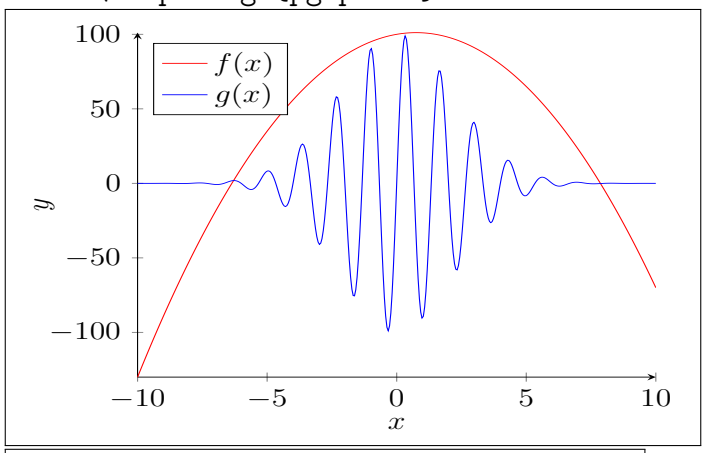


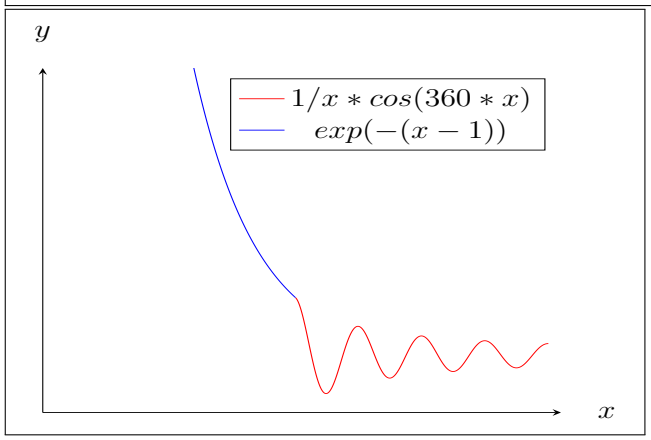
## 3.3 Color fillings



# 4 Plots

Braucht `\usepackage{pgfplots}`

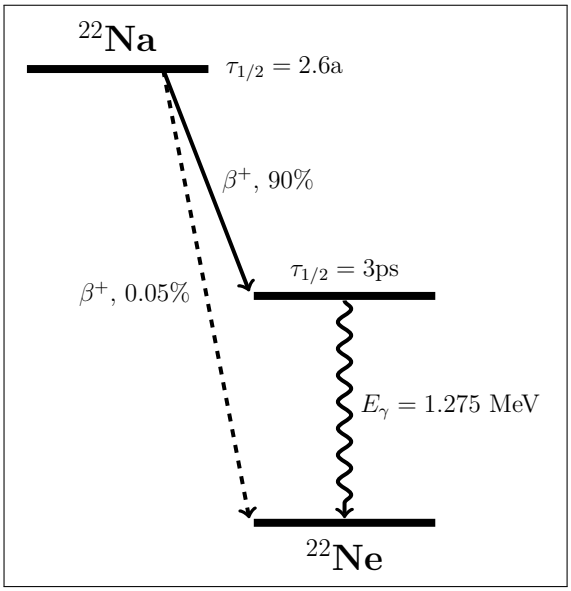


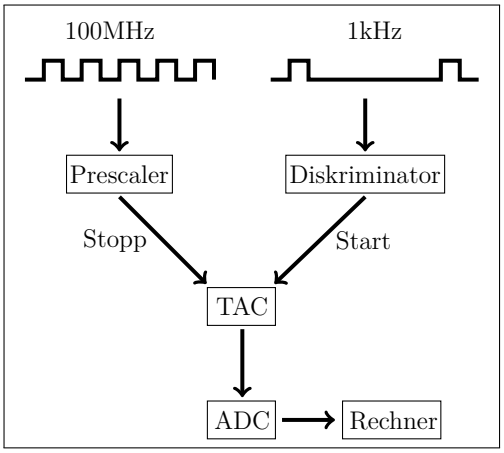
# 5 Meine Zeichnungen

## 5.1 Praktikumsbericht Kern- und Teilchenphysik: Positronenvernichtung

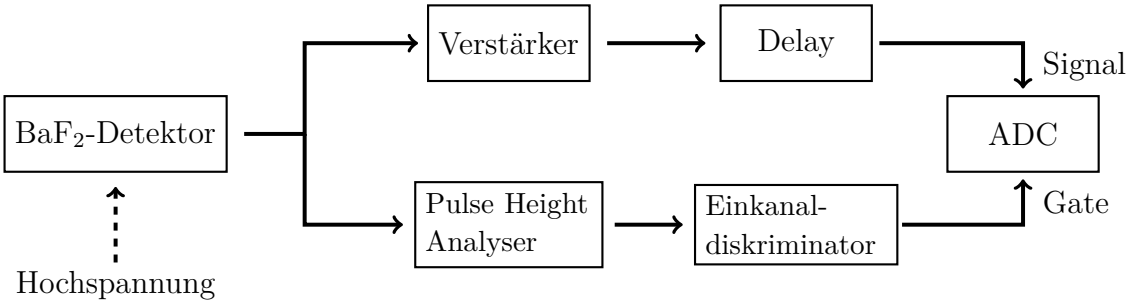
### 5.1.1 1



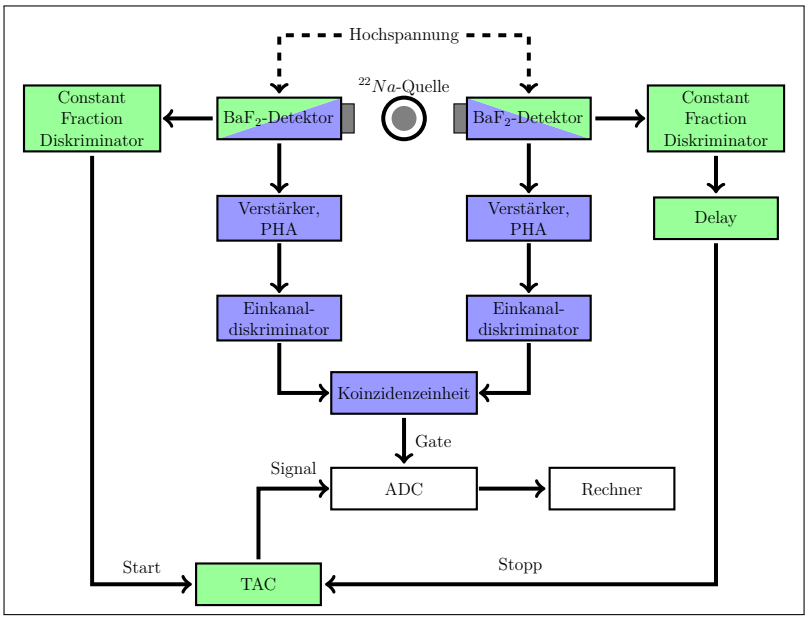

### 5.1.2 2



### 5.1.3 3

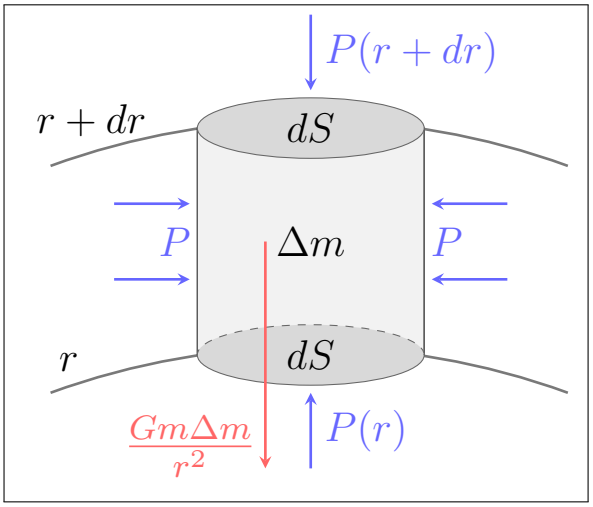

Verstärker
Delay
Signal
BaF2-Detektor
ADC
Pulse Height Analyser
Einkanal-diskriminator
Gate
Hochspannung

### 5.1.4 4

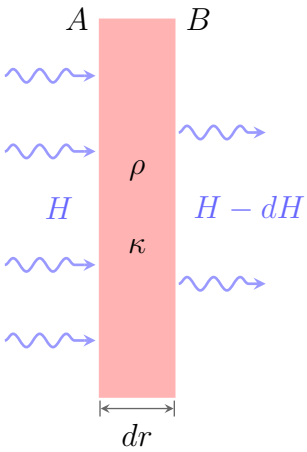

Hochspannung
22Na-Quelle
Constant Fraction Diskriminator
BaF2-Detektor
BaF2-Detektor
Constant Fraction Diskriminator
Verstärker, PHA
Verstärker, PHA
Delay
Einkanal-diskriminator
Einkanal-diskriminator
Koinzidenzeinheit
Gate
Signal
ADC
Rechner
Start
TAC
Stopp

## 5.2 Proseminar Theoretische Physik: The Theory of Stellar Evolution

### 5.2.1 1




### 5.2.2 2




## 5.3 HPC 1b Slides

| | | |
|---|---|---|
| $P6$ | $P7$ | $P8$ |
| $P3$ | $P4$ | $P5$ |
| $P0$ | $P1$ | $P2$ |

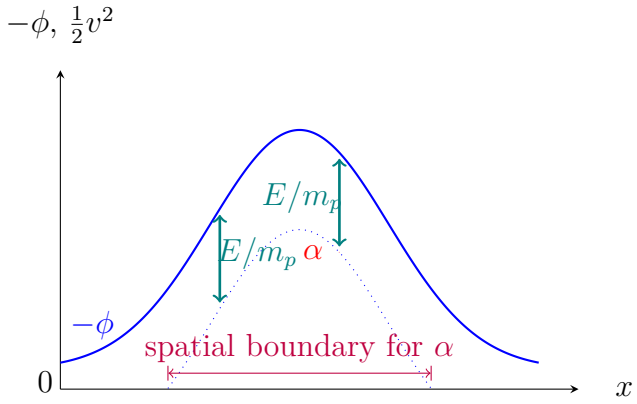
Processor distribution for a 'square' execution

| | | | |
|---|---|---|---|
| $P0$ | $P1$ | $P2$ | $P3$ |

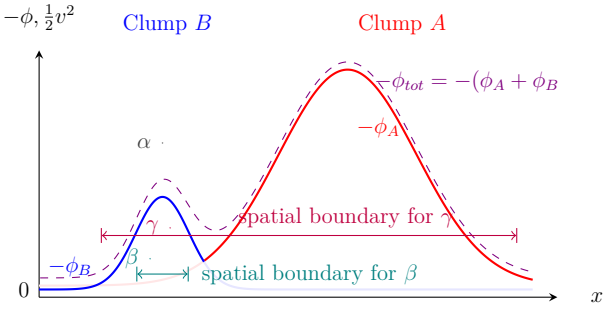
Processor distribution for a 'linear' execution

## 5.4 Bachelor thesis

### 5.4.1 Estimating Boundaries

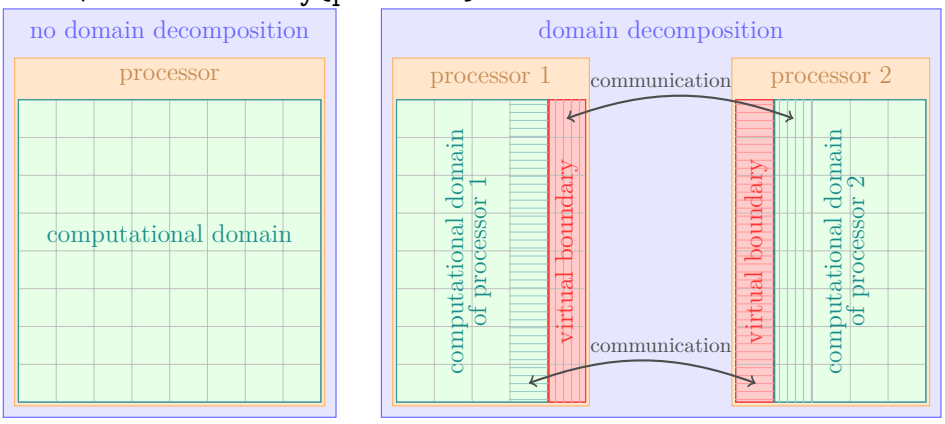



### 5.4.2 Potentials for exclusively bound particles



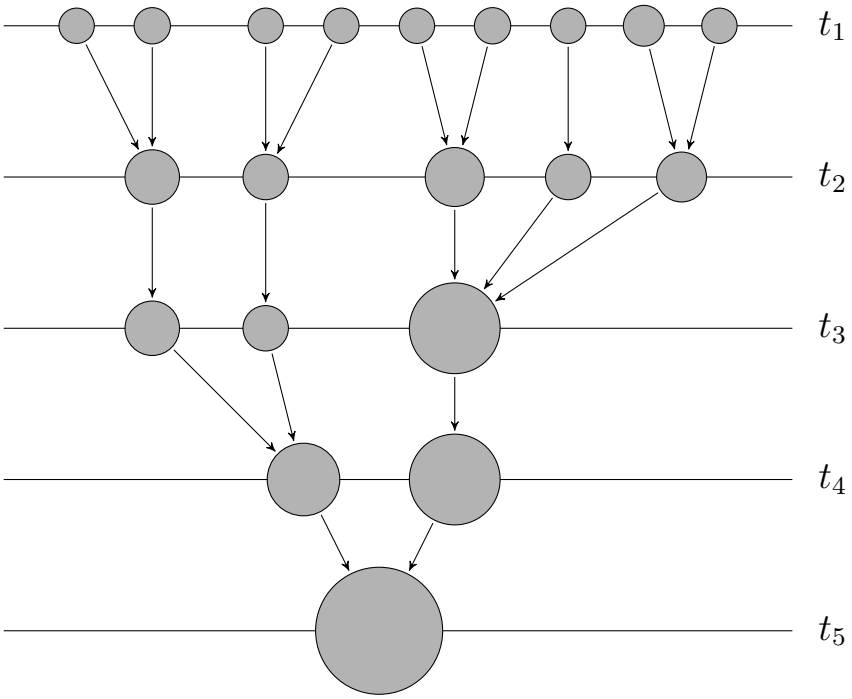

### 5.4.3 Domain Decomposition

needs `\usetikzlibrary{patterns}`



## 5.5 Master Thesis

### 5.5.1 Merger Tree




### 5.5.2 Fracture