

Drawing in \LaTeX

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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

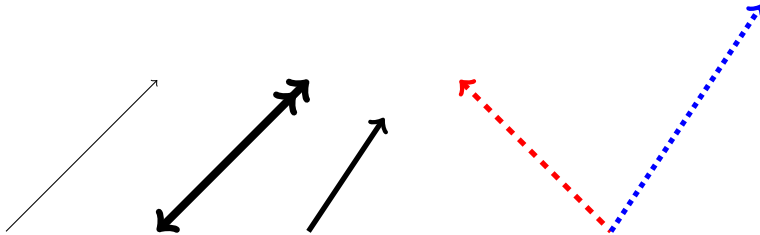
- <http://www.math.uni-leipzig.de/~hellmund/LaTeX/pgf-tut.pdf>
- http://www.math.tugraz.at/~huss/new/teaching/computermathematik09/dateien/tikz_demonstration.pdf <http://www.texample.net/tikz/>
- <https://www.sharelatex.com/blog/2013/08/27/tikz-series-pt1.html>

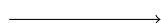
1 Basics


1.1 Gerade Linien zeichnen, relative Koordinaten





1.2 Pfeile





 `\draw[->]`

 `\draw[dotted,>->>]`

 `\draw[|<->|]`

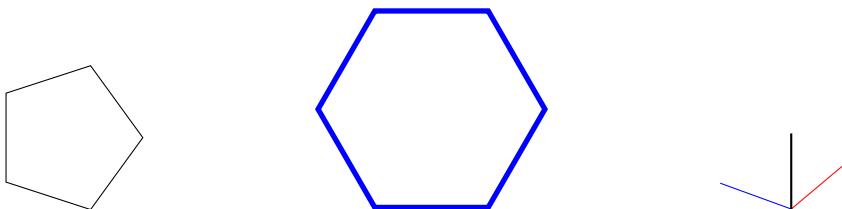
 `\draw[loosely dashed]`

 `\draw[densely dotted]`

 `\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

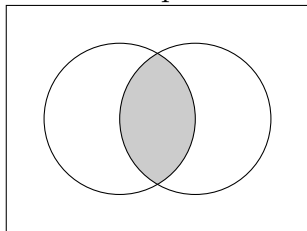
2.1 Fills



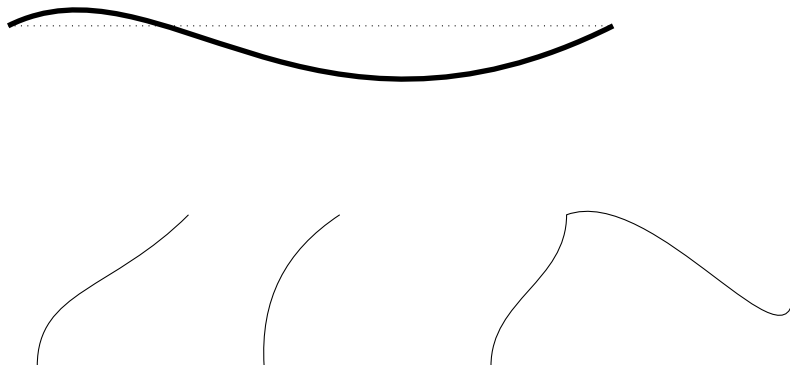
2.2 Clipping und Scope

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.

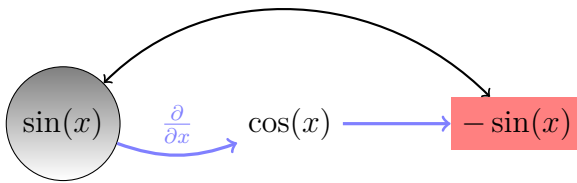
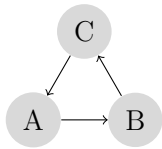


2.3 Kurvenlinien



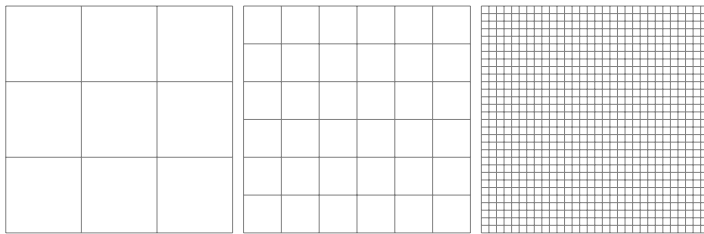
2.4 Nodes

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

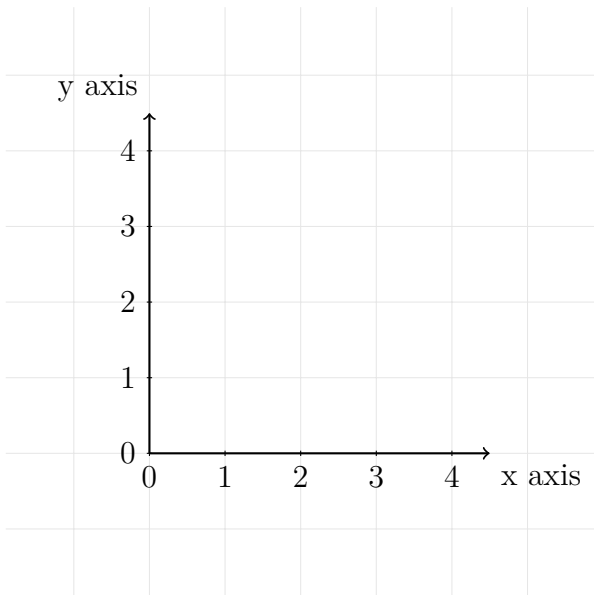


3 Varia

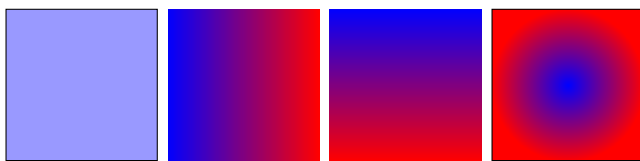
3.1 grid



3.2 Axes

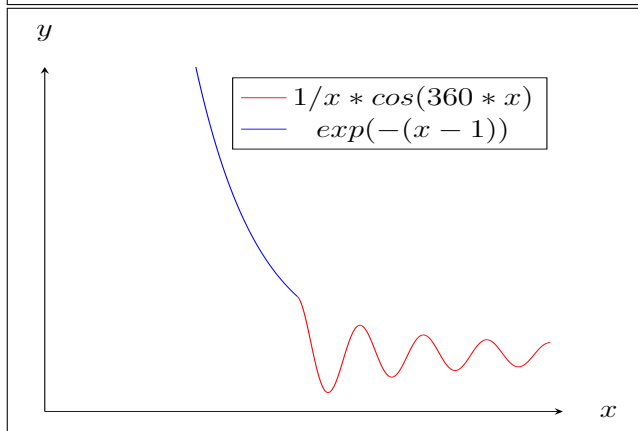
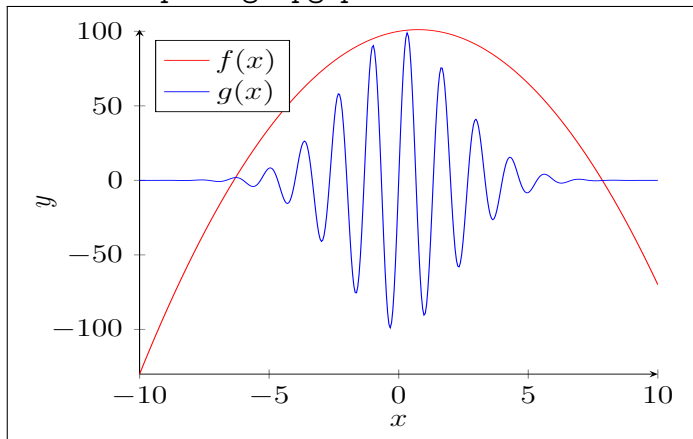


3.3 Color fillings



4 Plots

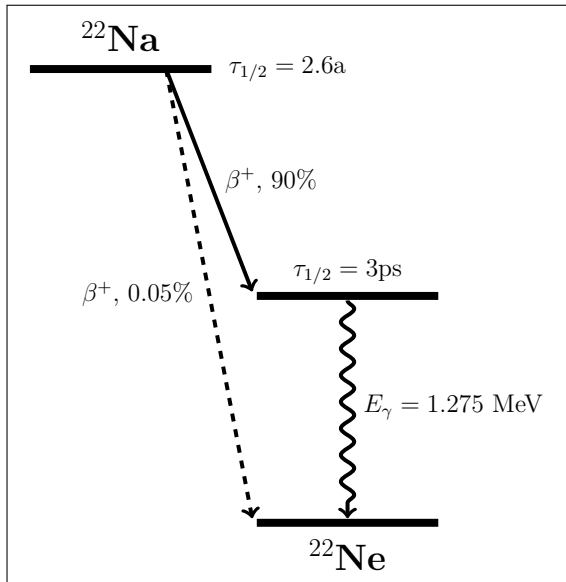
Braucht `\usepackage{pgfplots}`



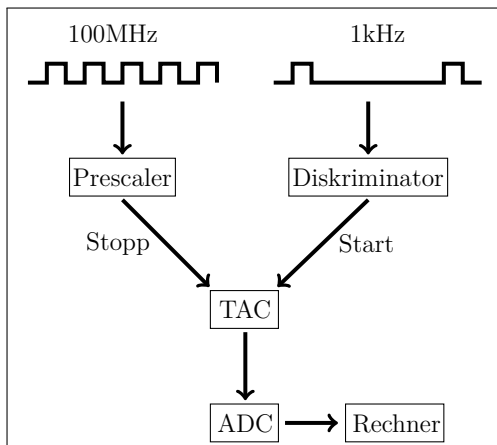
5 Meine Zeichnungen

5.1 Praktikumsbericht Kern- und Teilchenphysik: Positronenvernichtung

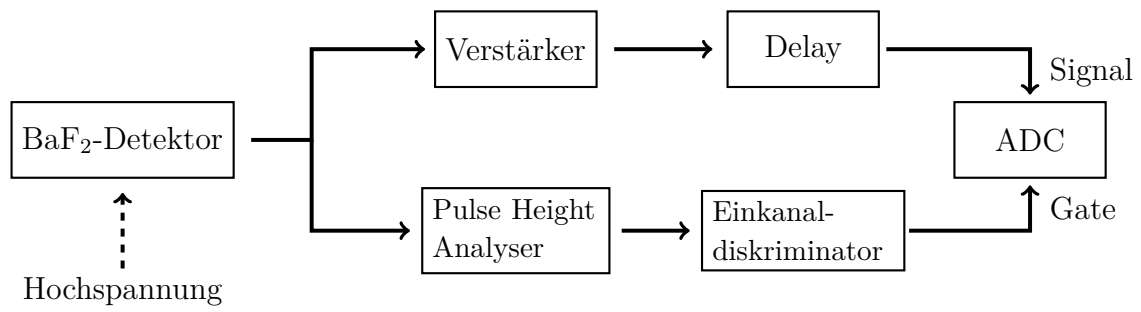
5.1.1 1



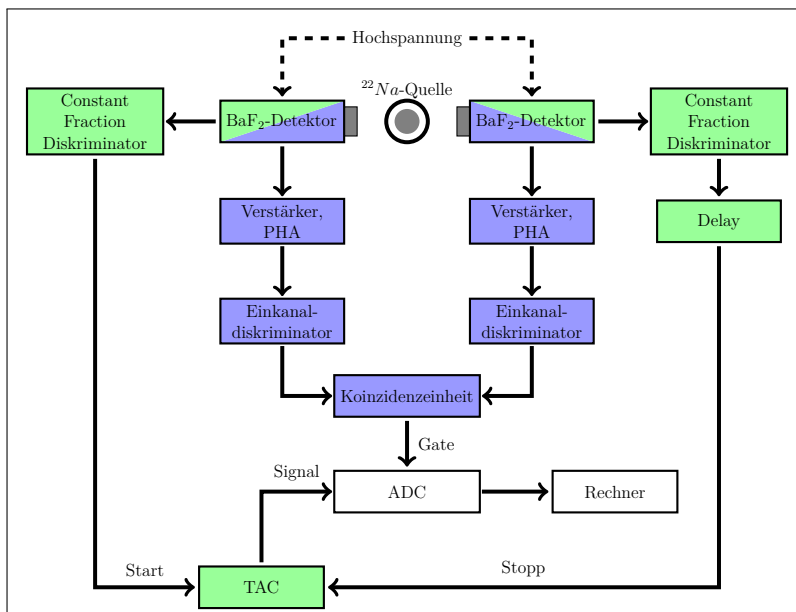
5.1.2 2



5.1.3 3

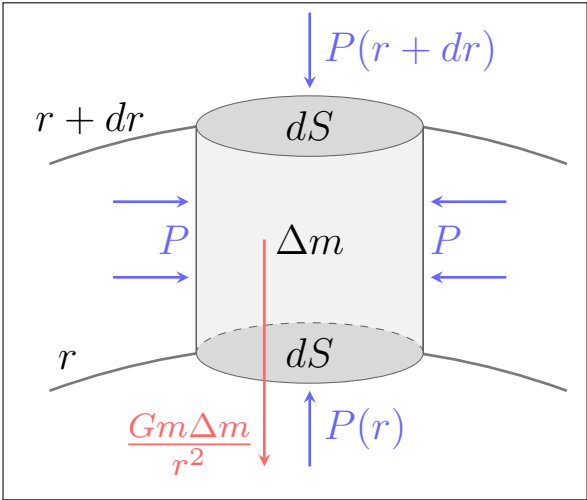


5.1.4 4

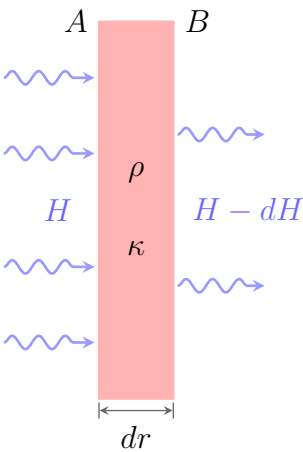


5.2 Proseminar Theoretische Physik: The Theory of Stellar Evolution

5.2.1 1



5.2.2 2



5.3 HPC 1b Slides

P_6	P_7	P_8
P_3	P_4	P_5
P_0	P_1	P_2

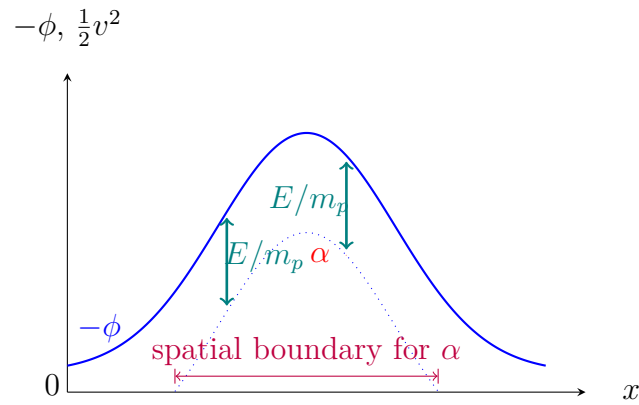
Processor distribution
for a 'square' execution

P_0	P_1	P_2	P_3
-------	-------	-------	-------

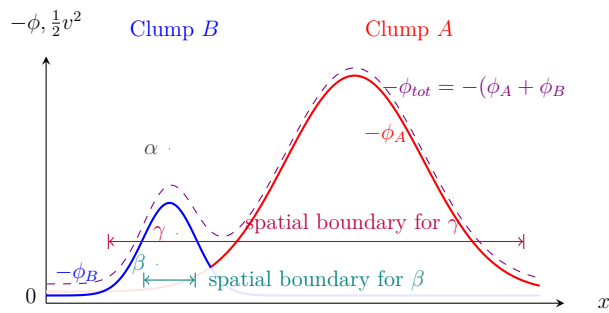
Processor distribution
for a 'linear' execution

5.4 Bachelor thesis

5.4.1 Estimating Boundaries

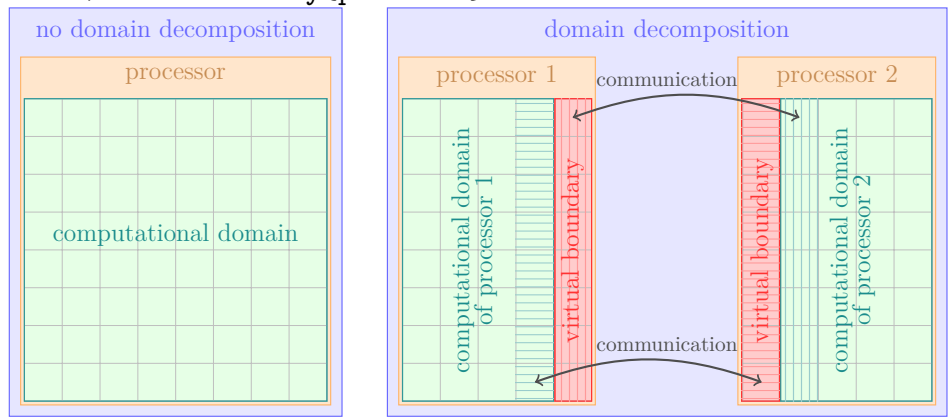


5.4.2 Potentials for exclusively bound particles



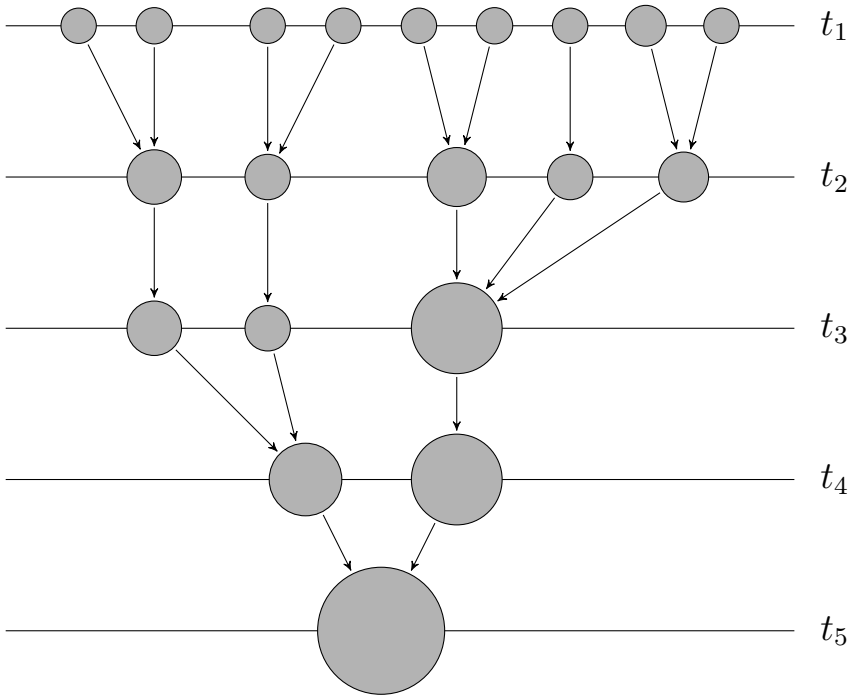
5.4.3 Domain Decomposition

needs `\usetikzlibrary{patterns}`

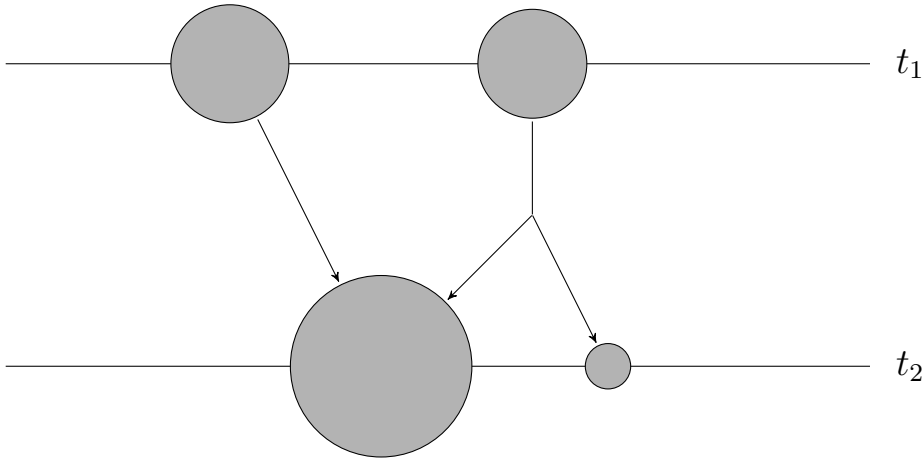


5.5 Master Thesis

5.5.1 Merger Tree

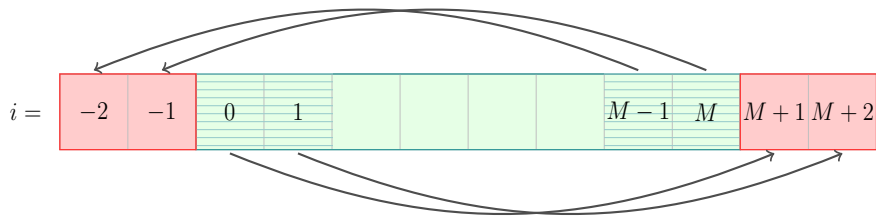


5.5.2 Fracture

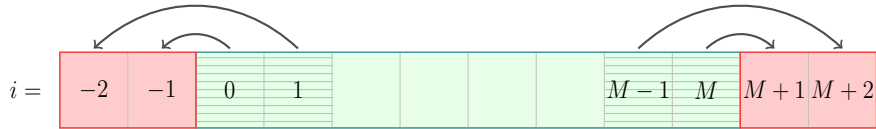


5.6 Hydro Boundary Conditions

5.6.1 Periodic



5.6.2 Wall



5.6.3 Transmissive

