

Drawing in \LaTeX

Inhaltsverzeichnis

0.1	Notizen	3
0.2	Links	4
1	Basics	5
1.1	Gerade Linien zeichnen, relative Koordinaten	5
1.2	Pfeile	5
1.3	Polarkoordinaten; Geschlossene Figur	5
1.4	Einfache Figuren	6
2	Komplexeres	6
2.1	Fills	6
2.2	Clipping und Scope	6
2.3	Kurvenlinien	6
2.4	Nodes	6
3	Varia	7
3.1	grid	7
3.2	Axes	7
3.3	Color fillings	8
4	Plots	9
5	Meine Zeichnungen	10
5.1	Praktikumsbericht Kern- und Teilchenphysik: Positronenvernichtung . . .	10
5.1.1	1	10
5.1.2	2	10
5.1.3	3	11
5.1.4	4	11
5.2	Proseminar Theoretische Physik: The Theory of Stellar Evolution	12
5.2.1	1	12
5.2.2	2	12
5.3	HPC 1b Slides	12
5.4	Bachelor thesis	13
5.4.1	Estimating Boundaries	13
5.4.2	Potentials for exclusively bound particles	13
5.4.3	Domain Decomposition	13
5.5	Master Thesis	14
5.5.1	Merger Tree	14
5.5.2	Fracture	14

5.6	Hydro Boundary Conditions	15
5.6.1	Periodic	15
5.6.2	Wall	15
5.6.3	Transmissive	15
5.7	Radiative Transfer	15
5.7.1	Absorption	15
5.8	Individual Timesteps and Subcycling	16

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]
```

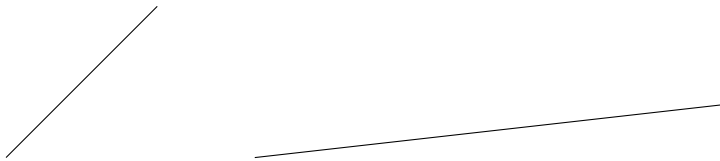
Transform shape: Damit Node-Text mitskaliert wird.

0.2 Links

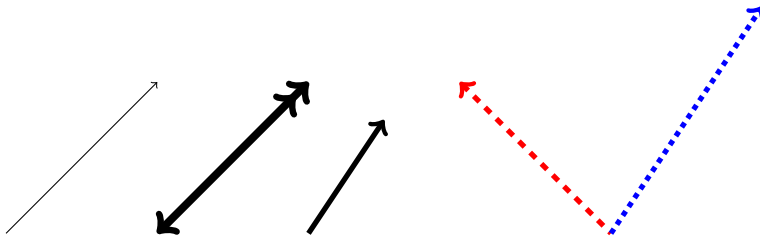
- <http://www.math.uni-leipzig.de/~hellmund/LaTeX/pgf-tut.pdf>
- http://www.math.tugraz.at/~huss/new/teaching/computermathematik09/dateien/tikz_demonstration.pdf <http://www.texample.net/tikz/>
- <https://www.sharelatex.com/blog/2013/08/27/tikz-series-pt1.html>


1 Basics

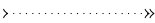
1.1 Gerade Linien zeichnen, relative Koordinaten

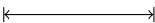


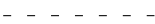
1.2 Pfeile




 `\draw[->]`

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

 `\draw[|<->|]`

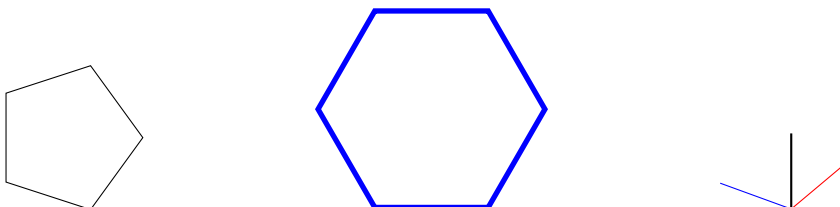
 `\draw[loosely dashed]`

 `\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

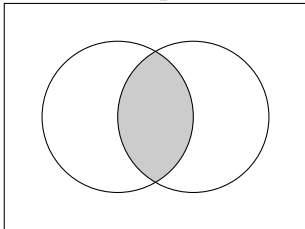
2.1 Fills



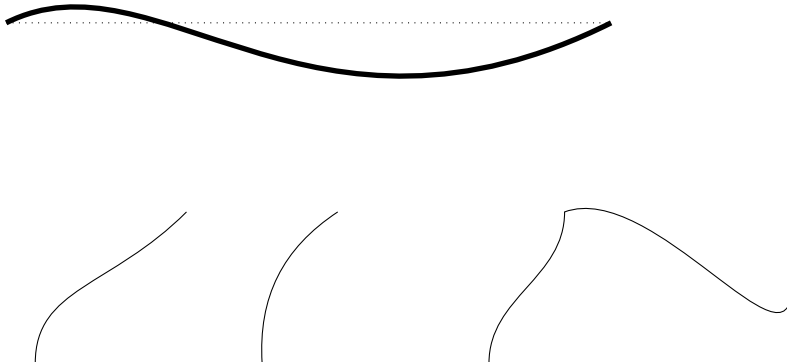
2.2 Clipping und Scope

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.

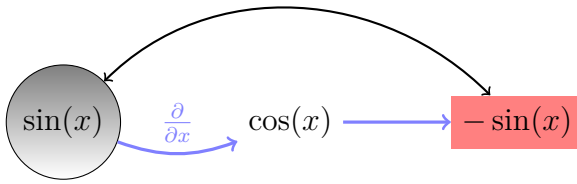
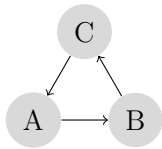


2.3 Kurvenlinien



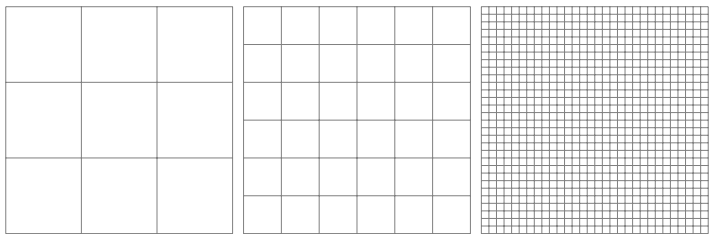
2.4 Nodes

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

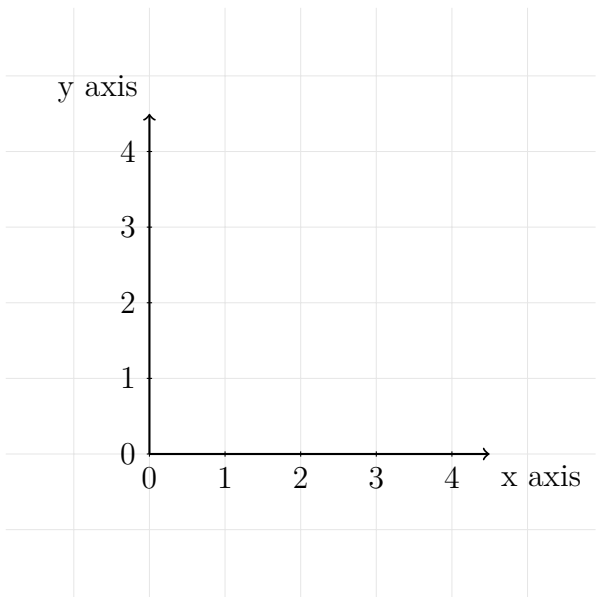


3 Varia

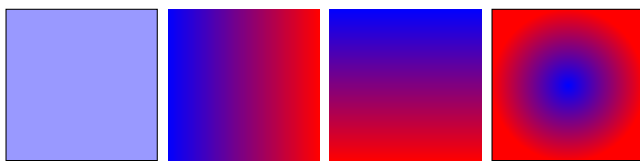
3.1 grid



3.2 Axes

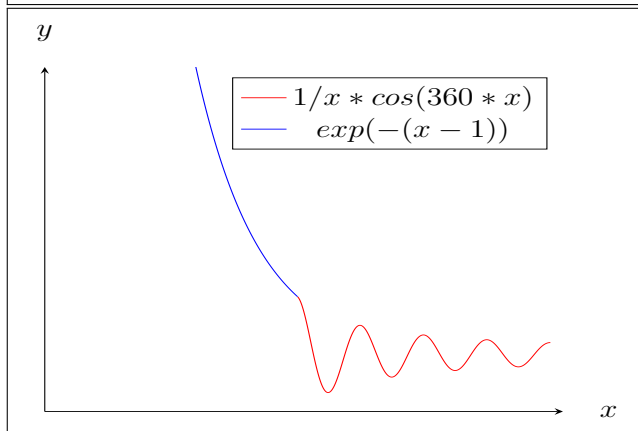
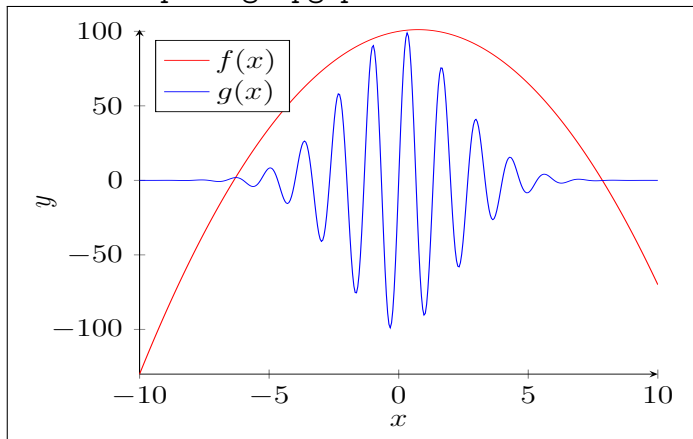


3.3 Color fillings



4 Plots

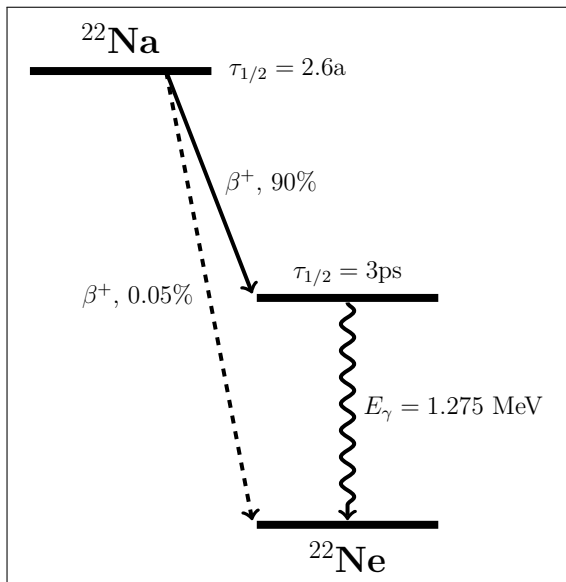
Braucht `\usepackage{pgfplots}`



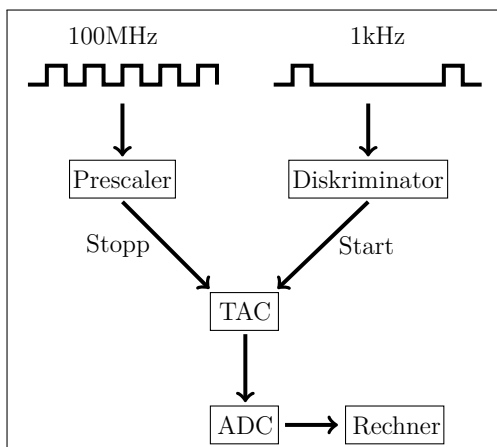
5 Meine Zeichnungen

5.1 Praktikumsbericht Kern- und Teilchenphysik: Positronenvernichtung

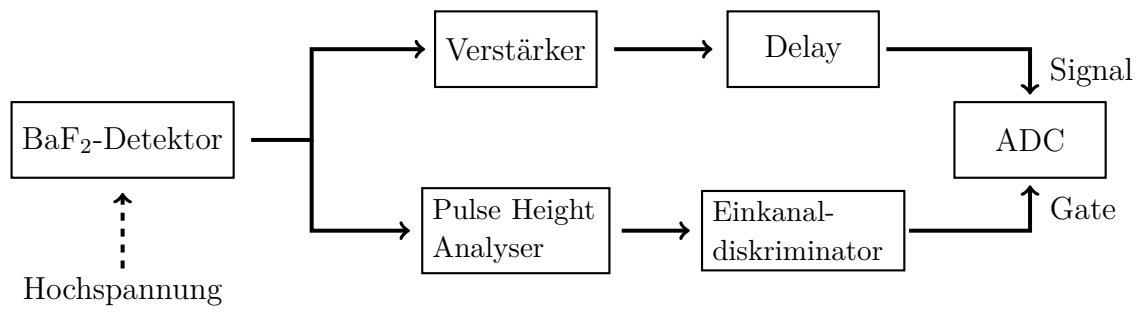
5.1.1 1



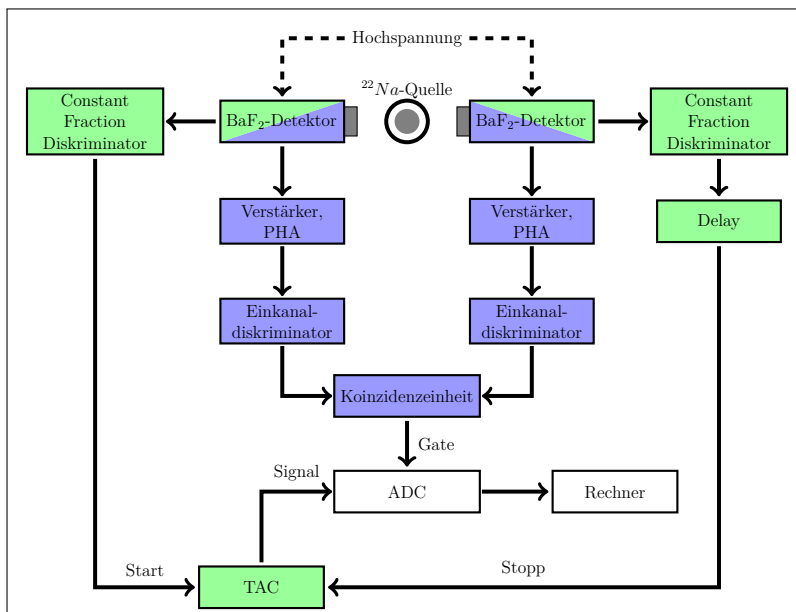
5.1.2 2



5.1.3 3

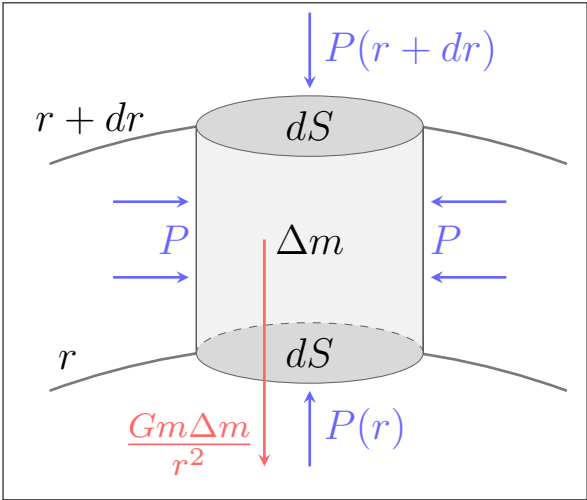


5.1.4 4

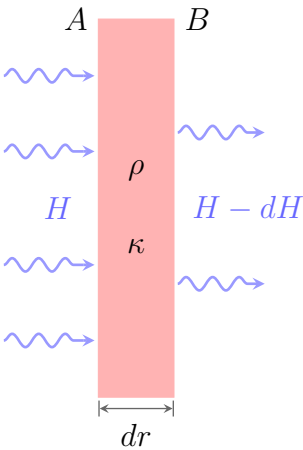


5.2 Proseminar Theoretische Physik: The Theory of Stellar Evolution

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

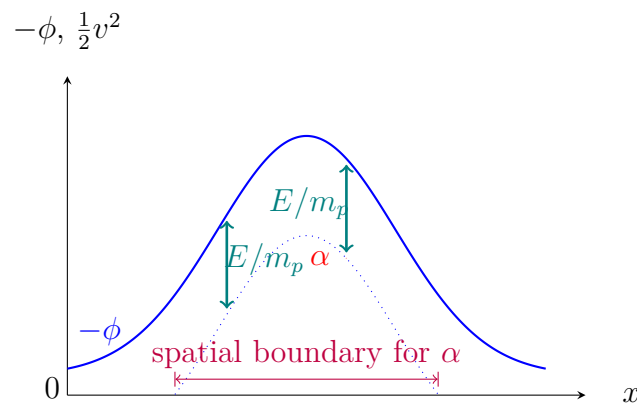
Processor distribution
for a 'square' execution

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

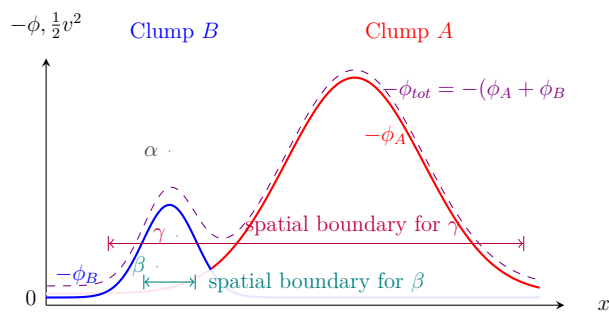
Processor distribution
for a 'linear' execution

5.4 Bachelor thesis

5.4.1 Estimating Boundaries

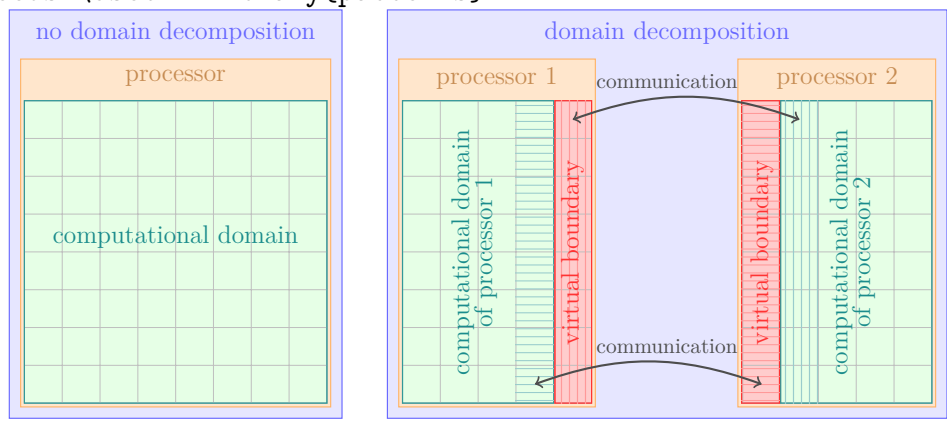


5.4.2 Potentials for exclusively bound particles



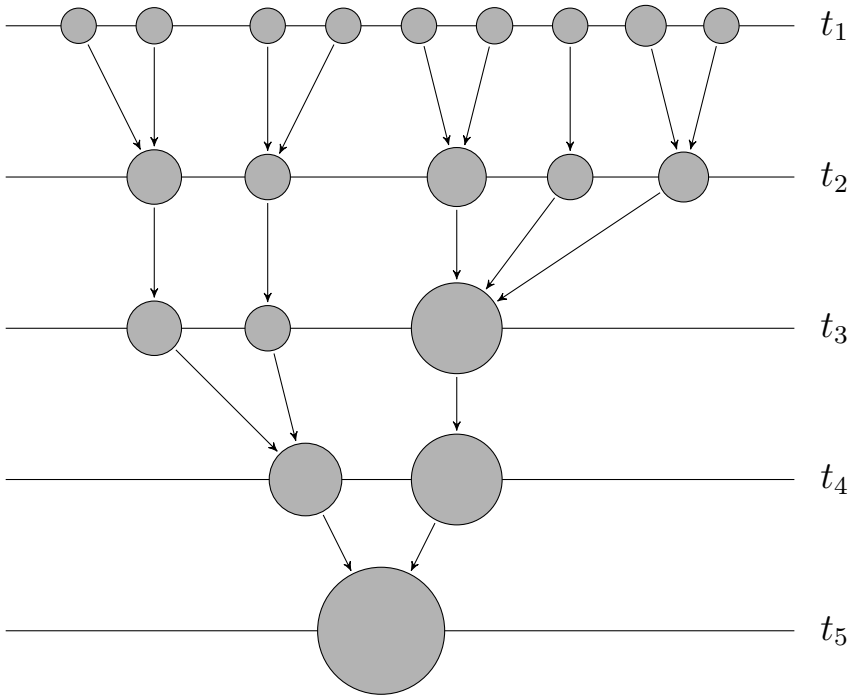
5.4.3 Domain Decomposition

needs `\usetikzlibrary{patterns}`

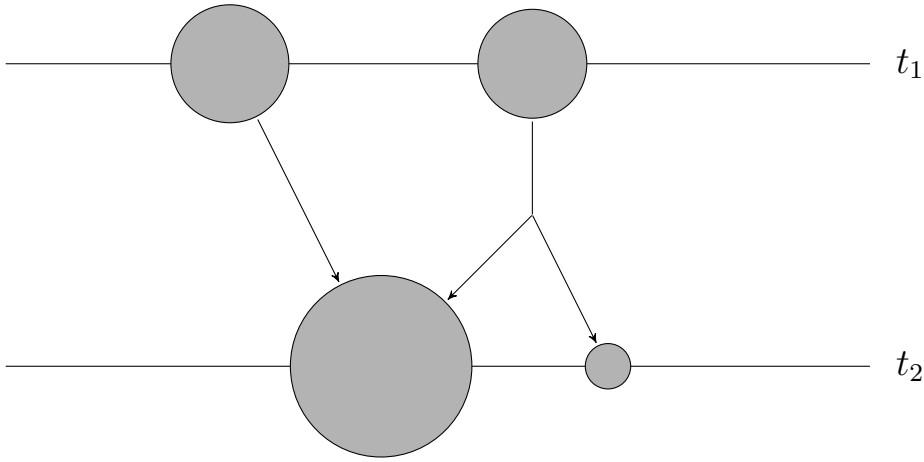


5.5 Master Thesis

5.5.1 Merger Tree

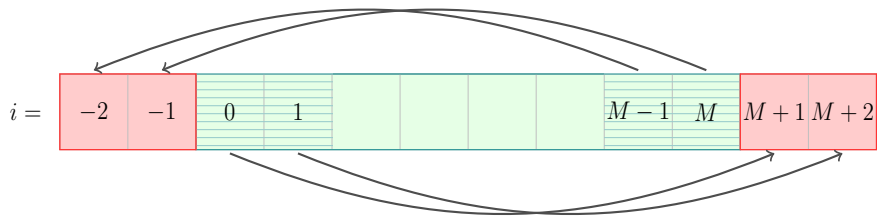


5.5.2 Fracture

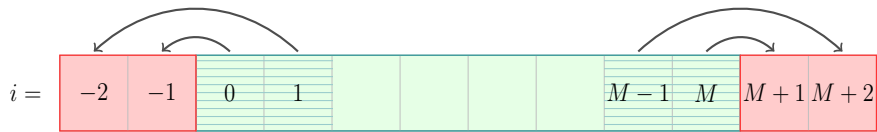


5.6 Hydro Boundary Conditions

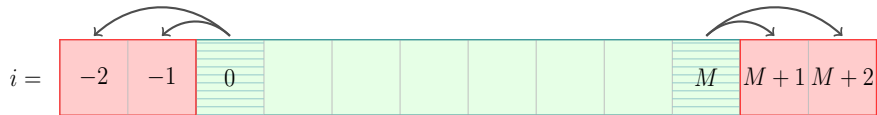
5.6.1 Periodic



5.6.2 Wall

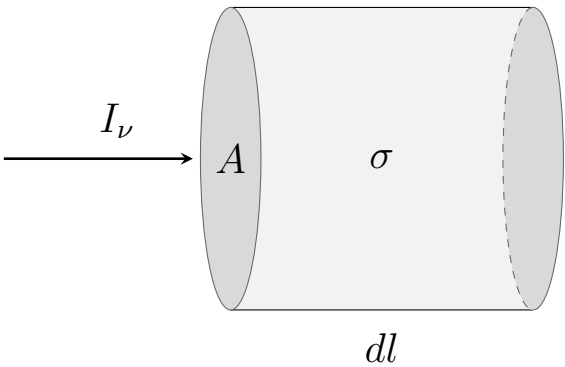


5.6.3 Transmissive



5.7 Radiative Transfer

5.7.1 Absorption



5.7.2 Individual Timesteps and Subcycling

