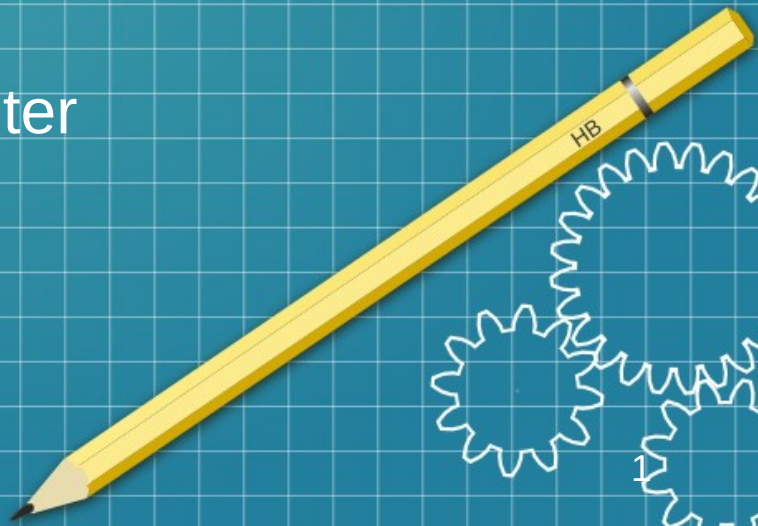
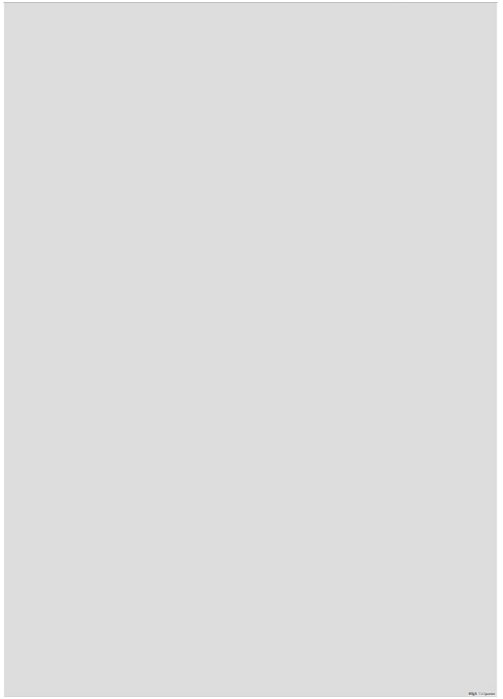
Latex

- TikZposter
- Zotero & BetterBibLatex
- Macros
- siunitx – Skriv SI-enheter
- listings – Lista kod



TikZposters

```
\documentclass[25pt, a0paper,
portrait]{tikzposter}
```



TikZposter

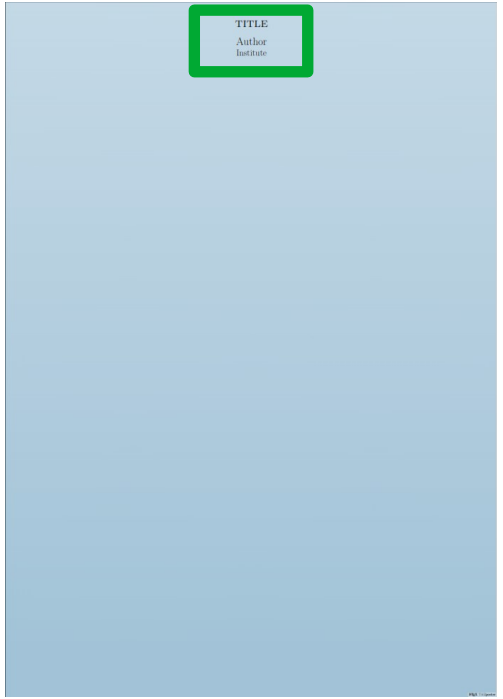
Preamble

```
\usepackage{amsmath,amsthm,amsfonts,amssymb,amscd}
\usepackage{graphicx}
\usepackage{xcolor} %Fler färger
\usepackage[colorlinks=false, allcolors=blue]{hyperref}
\usepackage{parskip} %% Tillåter vanligt radbyte
\usepackage{pgfplots, pgfplotstable}
\pgfplotsset{compat=1.17}
\usepackage{esvect} %Vektortecken
\usepackage{siunitx} %Eneheter i math environment
\usepackage{lipsum}%http://ctan.org/pkg/lipsum
\usepackage{float}
\usepackage[export]{adjustbox}
\usepackage{mathtools}
\usepackage{nicefrac} %Allows 1/2 style fracs
\usepackage{caption, subcaption} %Allows for subfigure
\usepackage{listings} %Code listing
```

```
\title{}
\author{}
\date{\today}
\institute{}
\usetheme{Board} %Default, Rays, Basic,Simple, Envelope, Wave, Board, Autumn, and Desert
\usecolorpalette{Default} %Default, BlueGrayOrange, GreenGrayViolet, PurpleGrayBlue,BrownBlueOrange
\usecolorstyle{Default} %Default, Australia, Britain, Sweden, Spain, Russia, Denmark, Germany
```

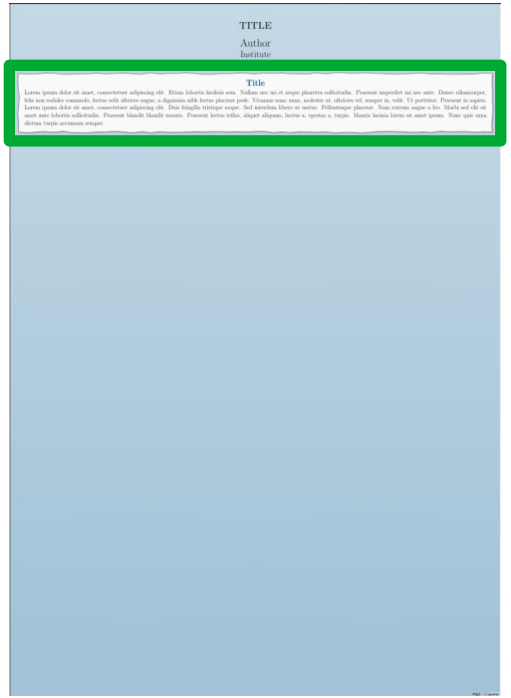
TikZposter

```
\begin{document}
\maketitle
\end{document}
```



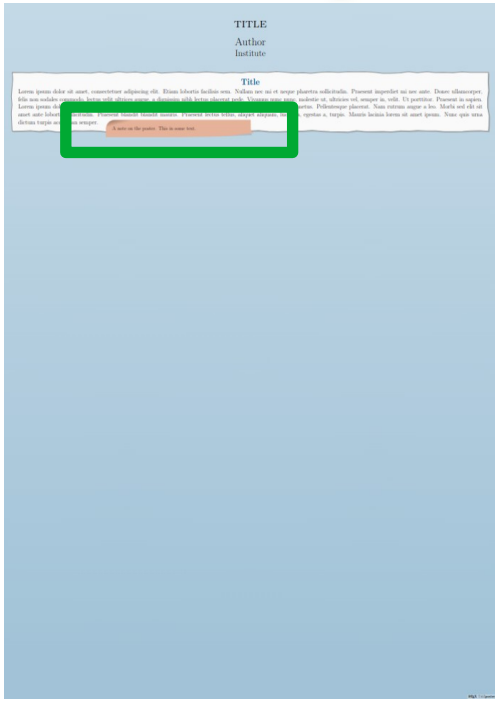
TikZposter

```
\block{Title}{
    Text in block
}
```



TikZposter

```
\note[
    targetoffsetx=-1cm,
    targetoffsety=-1cm,
    width=0.3\linewidth
]{
    Text on note.
}
```



TikZposter

```
\begin{columns}
  \column{0.33}
  \begin{subcolumns}{0.25}
    \subcolumn{0.5}
    \block{Subblock 1}{Some text.}
    \subcolumn{0.5}
    \block{Subblock 2}{Some text.}
  \end{subcolumns}
  \column{0.33}
  \block{Block 2}{Text in block}
  \column{0.33}
  \block{Block 3}{Text in block}
\end{columns}
```

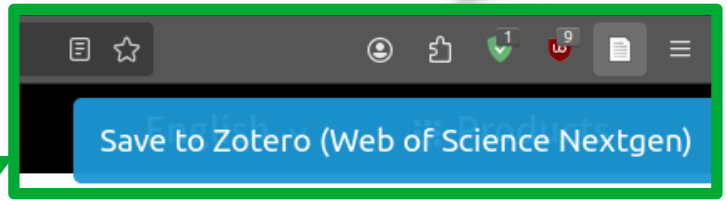
TikZposter

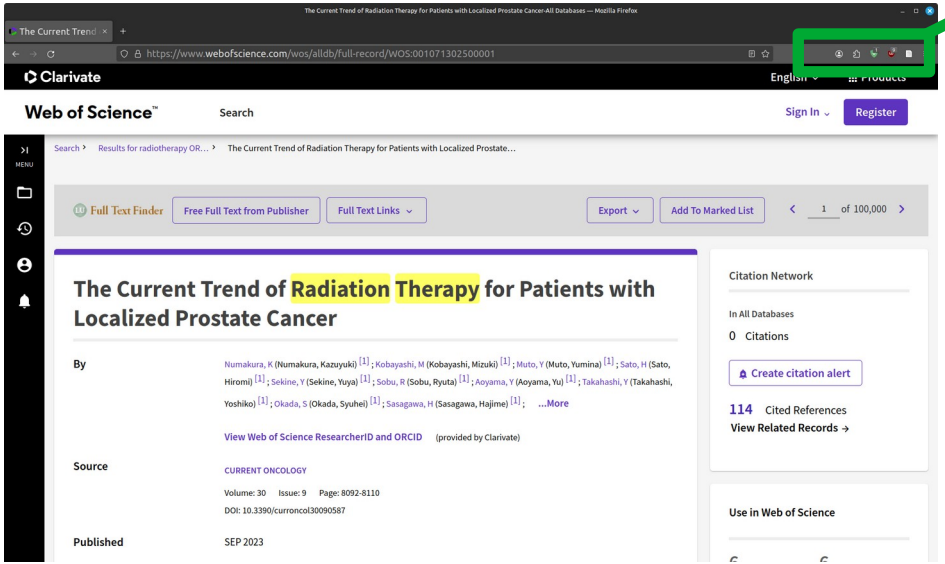
```
\begin{columns}
    \column{0.5}
    \block{A figure}{
        \begin{tikzfigure}
            \includegraphics
            [width=\linewidth]{Hatt.PNG}
        \end{tikzfigure}
        }
\end{columns}
```

Zotero

1) Installera desktop programmet och browser extension
2) Installera add-ons
    1) Better BibLatex
    2) PDF preview

Zotero

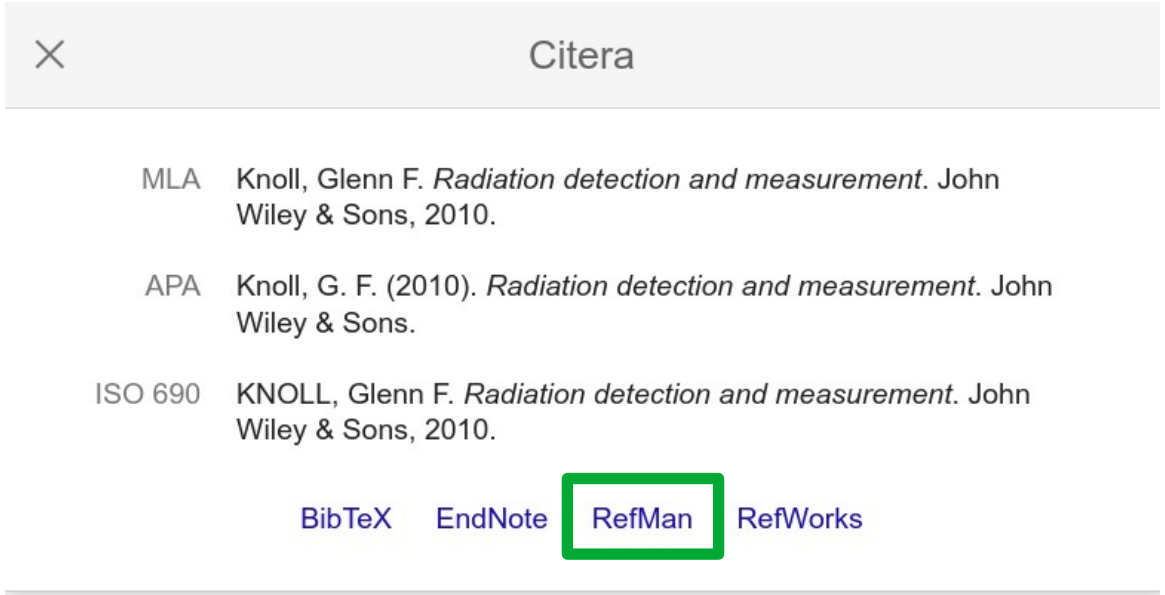




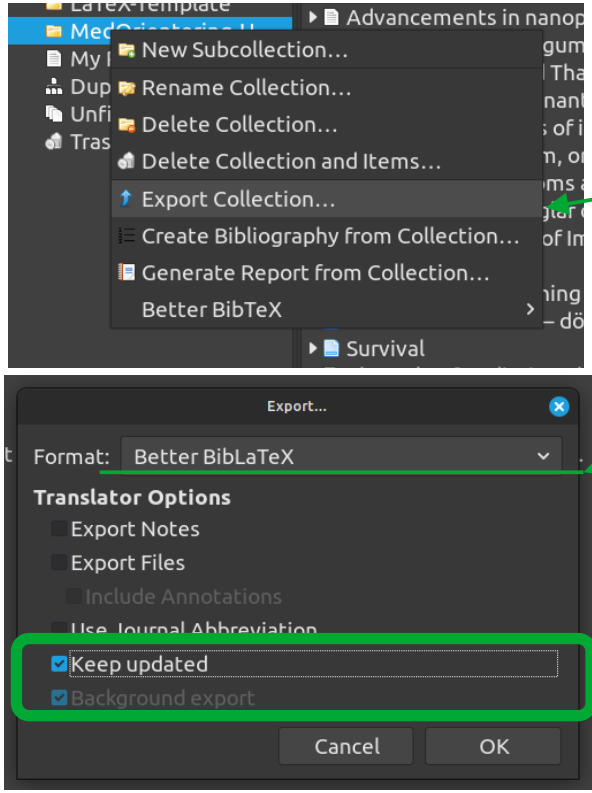
- Laddar ner referens
  - ⇒ Om möjligt laddas även artikeln ner som PDF
  - ⇒ Finns ingen tillgänglig PDF tas en snapshot av sidan

Zotero

I Google Scholar används RefMan



Zotero



- Exportera en collection i taget för kortare kompileringstid i latex arbetet
- Format: Better BibLaTeX
- Uppdaterar .bib-filen vid varje gång en ny referens läggs till
  - ⇒ Tas bort i **Tools → Better BibTex → Open Better BibTex preferences... → Automatic Export → Remove**

Zotero

- Kräver BibLaTeX paketet

```
\usepackage[style=vancouver,backend=biber]{biblatex}
\usepackage{url}
\addbibresource{file.bib}
```

- Importera alla filer i en mapp

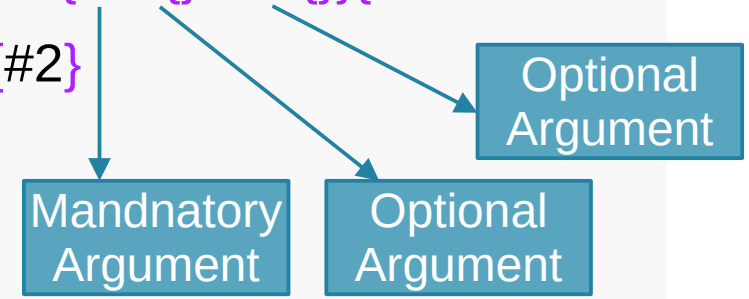
```
\addbibresource[glob]{bibfiles/*}
```

För integration i VScode
använd LatexUtilities add-on.
Bind en key-shortcut i
inställningar (alt+n).

Macros

```
\usepackage{xparse}
\NewDocumentCommand{\name}{args}{body}

                                  #1#2...
\NewDocumentCommand\MACRO{mO{}D<>{}}{
   #3\left(\frac{dE}{dx}\right)_{#1}^{#2}
}
```



Macros

```
\MACRO{man} %One mandatory
\MACRO{man}[opt] % One mandatory and one optional
\MACRO{man}<sopt> % One mandatory and one special optional
\MACRO{man}[opt]<sopt> % All possible argument
```

$$\left(\frac{dE}{dx}\right)_{man}$$

$$\left(\frac{dE}{dx}\right)_{man}^{opt}$$

$$sopt\left(\frac{dE}{dx}\right)_{man}$$

$$sopt\left(\frac{dE}{dx}\right)_{man}^{opt}$$

Macros

```
\NewDocumentCommand\MACRO{sm}{
\IfBooleanTF#1
    {Use #2 with a star}
    {Use #2 without a star}
}
```

```
\NewDocumentCommand{\header}{od<>d==}{
\pagestyle{fancy}
   \IfNoValueTF{#1}{
      \fancyhead[HL]{\author}}{fancyhead[HL]{#1}
   }
   \IfNoValueTF{#2}{
      \fancyhead[HC]{\title}}{fancyhead[HC]{#2}
   }
   \IfNoValueTF{#3}{
      \fancyhead[HR]{\date}}{\fancyhead[HR]{#3}
   }
}
```

siunitx

```
\usepackage{siunitx}
```

- Gör options globala med

```
\sisetup{
inline-per-mode = symbol,
separate-uncertainty = true}
```

siunitx

`\num[opt]{number}`

- `\num{123}`
  - ⇒ 123
- `\num{12345}`
  - ⇒ 12 345
- `\num{12e3}`
  - ⇒ 12×10^{-3}

`\ang[opt]{angle}`

- `\ang{90}`
  - ⇒ 90°
- `\ang{1;2;3}`
  - ⇒ 1°2’3”
- `\ang{;;1}`
  - ⇒ 1”

siunitx

\unit[opt]{unit}

- \unit{s^{-1} g_{mass} / mol_{Al}}
  - ⇒ $s^{-1} g_{mass} / mol_{Al}$
- \unit{\micro\gray}
  - ⇒ µGy
- \unit{\km\per\cubic\second}
  - ⇒ km s^{-3}
- \unit{m \over s}
  - ⇒ $\frac{m}{s}$

siunitx

```
\qty{2.5E-9}[opt]{\kilo\gram\tothe{7.5}\meter\per\second\squared\per\micro\tesla}
```

- [per-mode = symbol]: $2.5 \times 10^{-9}\,\mathrm{kg}^{7.5}\,\mathrm{m}/(\mathrm{s}^2\,\mu\mathrm{T})$

- [per-mode = fraction]: $2.5 \times 10^{-9}\,\frac{\mathrm{kg}^{7.5}\,\mathrm{m}}{\mathrm{s}^2\,\mu\mathrm{T}}$

```
\qty[opt]{2.5 \pm 1}{\kilo\gram}
```

- [uncertainty-mode = full]: $2.5(1.0)\,\mathrm{kg}$
- [uncertainty-mode = separate]: $(2.5 \pm 1.0)\,\mathrm{kg}$

siunitx

Table 1: SI base units.

Unit	Command	Symbol
ampere	\ampere	A
candela	\candela	cd
kelvin	\kelvin	K
kilogram	\kilogram	kg
metre	\metre	m
mole	\mole	mol
second	\second	s

Table 2: Coherent derived units in the SI with special names and symbols.

Unit	Command	Symbol	Unit	Command	Symbol
becquerel	\becquerel	Bq	newton	\newton	N
degree Celsius	\degreeCelsius	°C	ohm	\ohm	Ω
coulomb	\coulomb	C	pascal	\pascal	Pa
farad	\farad	F	radian	\radian	rad
gray	\gray	Gy	siemens	\siemens	S
hertz	\hertz	Hz	sievert	\sievert	Sv
henry	\henry	H	steradian	\steradian	sr
joule	\joule	J	tesla	\tesla	T
lumen	\lumen	lm	volt	\volt	V
katal	\katal	kat	watt	\watt	W
lux	\lux	lx	weber	\weber	Wb

Table 5: Unit abbreviations

Unit	Abbreviation	Symbol
femtogram	\fg	fg
picogram	\pg	pg
nanogram	\ng	ng
microgram	\ug	µg
milligram	\mg	mg
gram	\g	g
kilogram	\kg	kg
picometre	\pm	pm
nanometre	\nm	nm
micrometre	\um	µm
millimetre	\mm	mm
centimetre	\cm	cm
decimetre	\dm	dm
metre	\m	m
kilometre	\km	km
attosecond	\as	as
femtosecond	\fs	fs
picosecond	\ps	ps
nanosecond	\ns	ns
microsecond	\us	µs
millisecond	\ms	ms
second	\s	s

Finns många fler

siunitx

Table 3: Non-SI units accepted for use with the International System of Units.

Unit	Command	Symbol
astronomicalunit	\astronomicalunit	au
bel	\bel	B
dalton	\dalton	Da
day	\day	d
decibel	\decibel	dB
degree	\degree	°
electronvolt	\electronvolt	eV
hectare	\hectare	ha
hour	\hour	h
litre	\litre	L
	\liter	L
minute (plane angle)	\arcminute	′
minute (time)	\minute	min
second (plane angle)	\arcsecond	″
neper	\neper	Np
tonne	\tonne	t

Table 4: SI prefixes.

Prefix	Command	Symbol	Power	Prefix	Command	Symbol	Power
quecto	\quecto	q	−30	deca	\deca	da	1
ronto	\ronto	r	−27	hecto	\hecto	h	2
yocto	\yocto	y	−24	kilo	\kilo	k	3
zepto	\zepto	z	−21	mega	\mega	M	6
atto	\atto	a	−18	giga	\giga	G	9
femto	\femto	f	−15	tera	\tera	T	12
pico	\pico	p	−12	peta	\peta	P	15
nano	\nano	n	−9	exa	\exa	E	18
micro	\micro	µ	−6	zetta	\zetta	Z	21
milli	\milli	m	−3	yotta	\yotta	Y	24
centi	\centi	c	−2	ronna	\ronna	R	27
deci	\deci	d	−1	quetta	\quetta	Q	30

siunitx

- \qty{662e3}{\eV}
  - ⇒ 662 x 10^3 eV
- \qtylist{5;10;15;20}{\metre}
  - ⇒ 5 m, 10 m, 15 m and 20 m
- \qtyproduct{5;10;15;20}{\metre}
  - ⇒ 5 m × 10 m × 15 m × 20 m
- \complexnum{3+5i}
  - ⇒ 3 + 5i

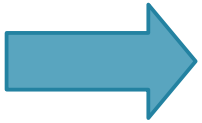
```
\qtylist{2;4;6;8}{\tesla} \\
\qtylist[list-units = bracket]{2;4;6;8}{\tesla} \\
\qtylist[list-units = repeat]{2;4;6;8}{\tesla} \\
\qtylist[list-units = single]{2;4;6;8}{\tesla} \\
\qtyrange{2}{4}{\degreeCelsius} \\
\qtyrange[range-units = bracket]{2}{4}{\degreeCelsius} \\
\qtyrange[range-units = repeat]{2}{4}{\degreeCelsius} \\
\qtyrange[range-units = single]{2}{4}{\degreeCelsius}
```

2 T, 4 T, 6 T and 8 T
(2, 4, 6 and 8) T
2 T, 4 T, 6 T and 8 T
2, 4, 6 and 8 T
2 °C to 4 °C
(2 to 4) °C
2 °C to 4 °C
2 to 4 °C

siunitx

- S-kolumn rättar tabell efter decimaltecken

```
\begin{tabular}{SS}
\toprule
    {Col 1} & {Col 2}\\
    \midrule
    3.14 & 133 \\
    31.4 & 13.3 \\
    \bottomrule
\end{tabular}
```



Col 1	Col 2
3.14	133
31.4	13.3

listings

```
\usepackage{listings}
```

```
\begin{lstlisting}[language=PythonPlus, gobble=4, emph = {}, caption = {}]
*kod*
\end{lstlisting}
```

Custom språk

Äter de första tecknen i varje rad

Ord som markeras i koden

listings

```
\usepackage{listings}
```

```
\begin{lstlisting}[language=PythonPlus,
gobble=4, emph = {}, caption = {}]
    import numpy as np
    #Comment
    for i in range(3)
        print("Sqrt of a number:")
        print(np.sqrt(i))
    class A_Class:
        __init__(self, i):
            self.i = i
\end{lstlisting}
```

```python
import numpy as np
#Comment
for i in range(3)
    print("Sqrt of a number:")
    print(np.sqrt(i))
class A_Class:
    __init__(self, i):
        self.i = i
```

listings

Escape characters (¤ ... ¤) → Tillbaka till LaTeX

```
\begin{lstlisting}[language=PythonPlus, gobble=4,
emph = {}, caption = {}]
    import numpy as np
    #Comment
    for i in range(3)
        print("Sqrt of a number:")
        print(np.sqrt(i))
    class A_Class: (¤ \label{lst:A_class_def} ¤)
        __init__(self, i):
            self.i = i
\end{lstlisting}
A\_Class is defined at line \ref{lst:A_class_def}.
```

```
1 import numpy as np
2 #Comment
3 for i in range(3)
4     print("Sqrt of a number:")
5     print(np.sqrt(i))
6 class A_Class:
7     __init__(self, i):
8         self.i = i
```

A_Class is defined at line 6.

listings

```
\lstinputlisting[language = PythonPlus, caption={Cap}]{hello.py}
```

- Importera kod från en .py-fil
- Välj rader från filen: linerange={x1-x2, y1-y2,...}

Misc

```
\usepackage{contour}
```

- `\colorbox{black}{\color{white}{Hej}}`
  - ⇒ Hej