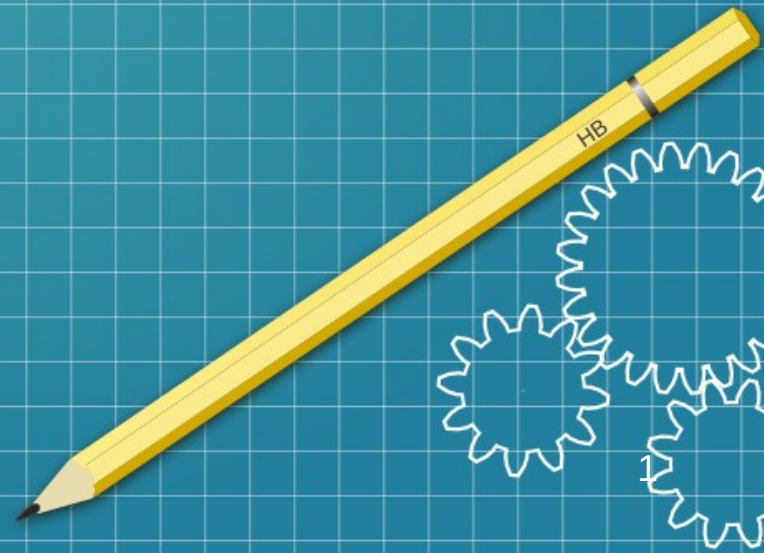


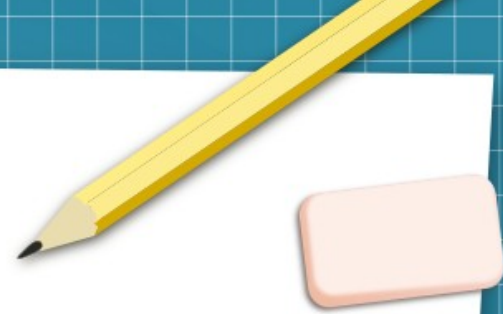
Latex



2024-10-06

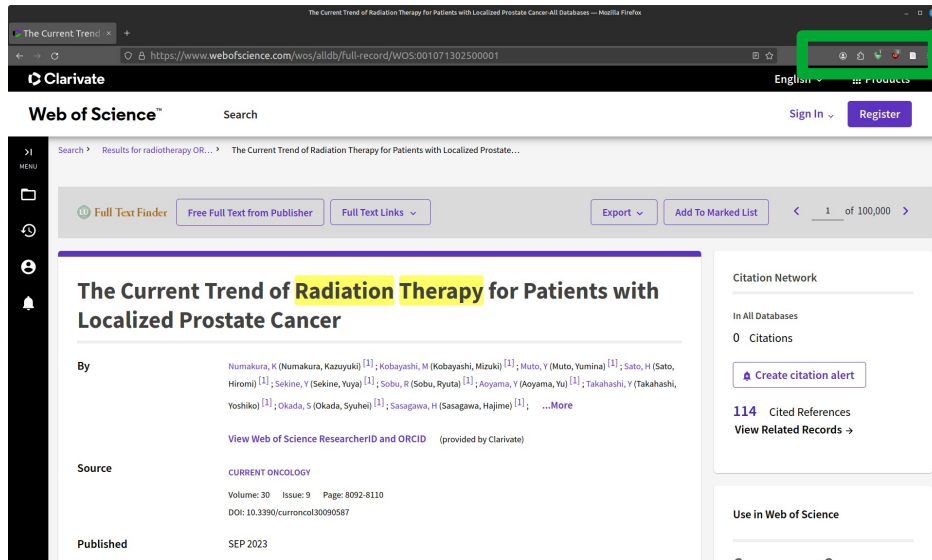
E.E.

Zotero



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


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

 Citra

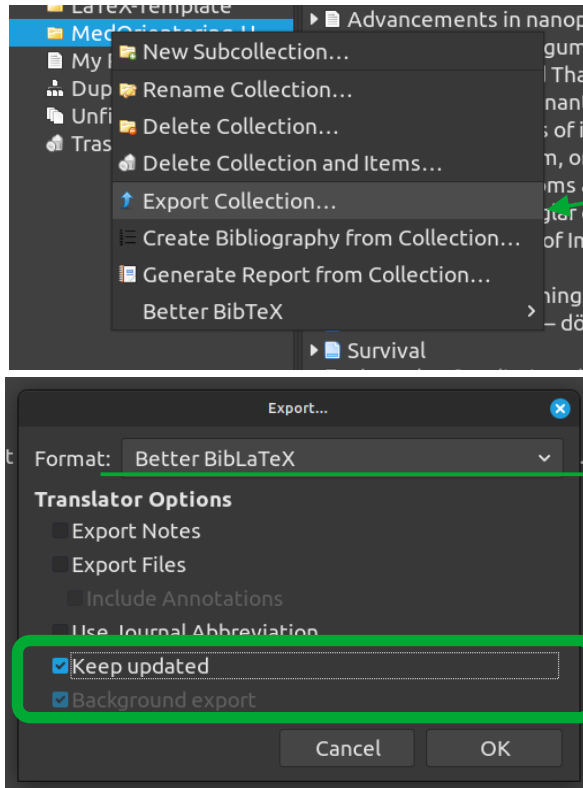
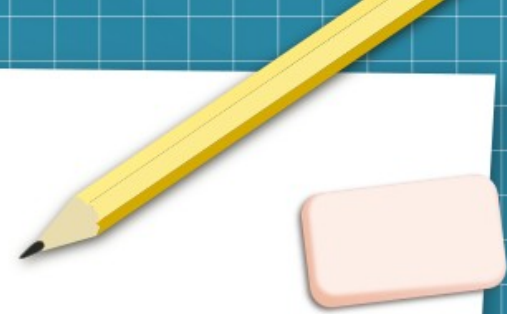
MLA Knoll, Glenn F. *Radiation detection and measurement*. John Wiley & Sons, 2010.

APA Knoll, G. F. (2010). *Radiation detection and measurement*. John Wiley & Sons.

ISO 690 KNOLL, Glenn F. *Radiation detection and measurement*. John Wiley & Sons, 2010.

[BibTeX](#) [EndNote](#) [RefMan](#) [RefWorks](#)

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=ieee,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}`

`}`

Optional
Argument

Mandnatory
Argument

Optional
Argument

Macros

IMACRO{man} % *One mandatory*

IMACRO{man}[opt] % *One mandatory and one optional*

IMACRO{man}<sopt> % *One mandatory and one special optional*

IMACRO{man}[opt]<sopt> % *All possible argument*

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

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

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

Macros



```
\NewDocumentCommand\MACRO{  
sm}{
```

```
\IfBooleanTF#1
```

```
{Use #2 with a star}
```

```
{Use #2 without a star}
```

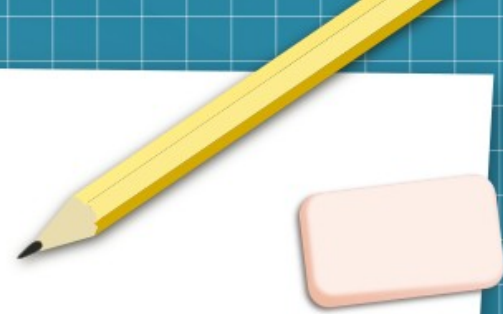
```
}
```

```
\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}  
  }  
}
```

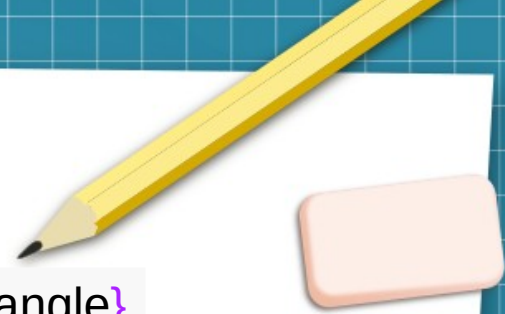
siunitx

`\usepackage{siunitx}`

- Gör options globala med
`\sisetup{`
inline-per-mode = symbol,
separate-uncertainty = true}



siunitx



`\num[opt]{number}`

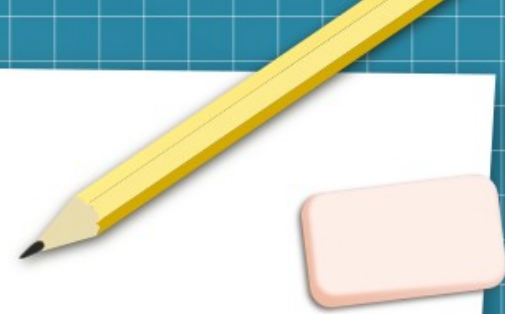
- `\num{123}`
 $\Rightarrow 123$
- `\num{12345}`
 $\Rightarrow 12\,345$
- `\num{12e3}`
 $\Rightarrow 12 \times 10^{-3}$

`\lang[opt]{angle}`

- `\lang{90}`
 $\Rightarrow 90^\circ$
- `\lang{1;2;3}`
 $\Rightarrow 1^\circ 2' 3''$
- `\lang{;;1}`
 $\Rightarrow 1''$

siunitx

`\unit[opt]{unit}`



- `\unit{s^{-1} g_{\text{mass}} / \text{mol}_{\text{Al}}}`

⇒ $\text{s}^{-1} \text{g}_{\text{mass}} / \text{mol}_{\text{Al}}$

- `\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]`: $2.5 \times 10^{-9} \text{ kg}^{7.5} \text{ m}/(\text{s}^2 \mu\text{T})$
- `[per-mode = fraction]`: $2.5 \times 10^{-9} \frac{\text{kg}^{7.5} \text{ m}}{\text{s}^2 \mu\text{T}}$

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

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

siunitx

Table 1: SI base units.

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

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

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

Table 5: Unit abbreviations

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

Finns många fler

siunitx

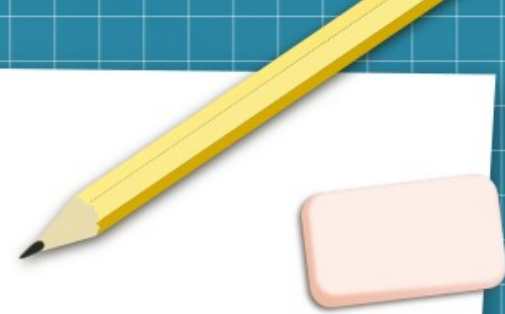


Table 3: Non-SI units accepted for use with the International System of Units.

Unit	Command	Symbol
astronomicalunit	<code>\astronomicalunit</code>	au
bel	<code>\bel</code>	B
dalton	<code>\dalton</code>	Da
day	<code>\day</code>	d
decibel	<code>\decibel</code>	dB
degree	<code>\degree</code>	°
electronvolt	<code>\electronvolt</code>	eV
hectare	<code>\hectare</code>	ha
hour	<code>\hour</code>	h
litre	<code>\litre</code>	L
	<code>\liter</code>	L
minute (plane angle)	<code>\arcminute</code>	'
minute (time)	<code>\minute</code>	min
second (plane angle)	<code>\arcsecond</code>	"
neper	<code>\neper</code>	Np
tonne	<code>\tonne</code>	t

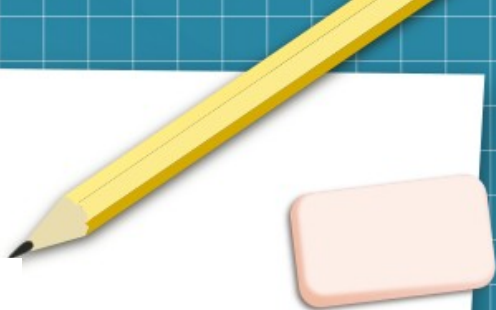
Table 4: SI prefixes.

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

siunitx



- `\qty{662e3}{\eV}`
 $\Rightarrow 662 \times 10^3 \text{ eV}$
- `\qtylist{5;10;15;20}{\metre}`
 $\Rightarrow 5 \text{ m}, 10 \text{ m}, 15 \text{ m} \text{ and } 20 \text{ m}$
- `\qtyproduct{5;10;15;20}{\metre}`
 $\Rightarrow 5 \text{ m} \times 10 \text{ m} \times 15 \text{ m} \times 20 \text{ m}$
- `\complexnum{3+5i}`
 $\Rightarrow 3 + 5i$

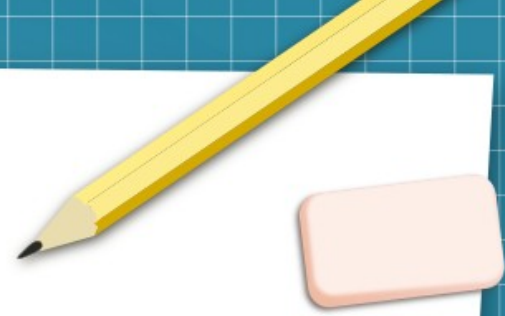


```

\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

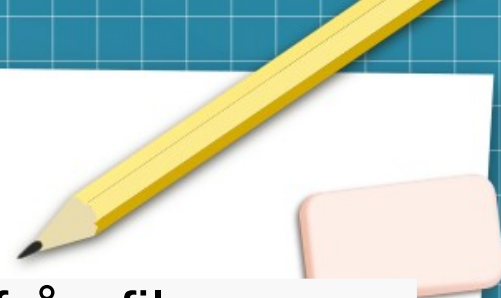
```

Minted



- `\mintinline{python}{code}`
- `\mint{python} | code |`

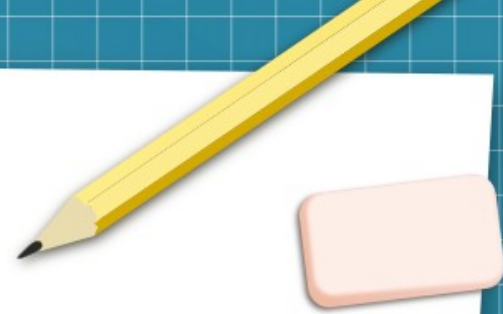
Minted from file



```
\inputminted[
  frame=lines,
  framesep=2mm,
  baselinestretch=1.2,
  bgcolor=backcolour,
  fontsize=\footnotesize,
  linenos, breaklines
]{Python}{file.py}
\captionof{listing}{Example of a
listing.}
```

- Importera kod från fil
- `\usepackage{minted}`

Misc



`\usepackage{contour}`

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