



# Main-Title

Sub-Title

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A tagline for the report.

Institution1

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# 1 Markdown

## 1.1 General

Some markdown text.

A list:

- something
- something else

A numbered list

1. something
2. something else

## 1.2 References and Citations

References to fig. 3.1, table 4.1, eq. 5.2 and code 3.1.

Referencing multiple items: figs. 3.1 to 3.3.

A latex citation.<sup>[1]</sup>

A html citation.<sup>[2]</sup>

## 1.3 Todo notes

an inline todo

Some text.

a todo in  
the mar-  
gins

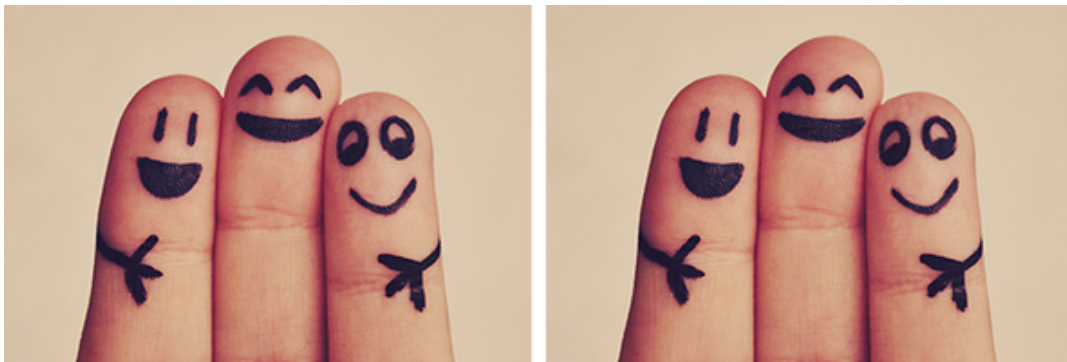
## 2 Text Output

```
This is some printed text,  
with a nicely formatted output.
```

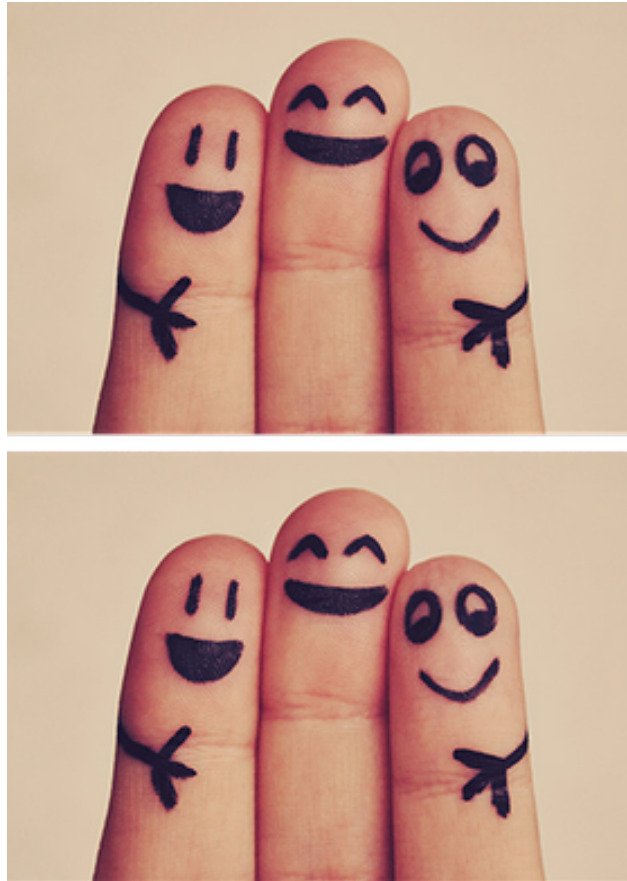
### 3 Images and Figures



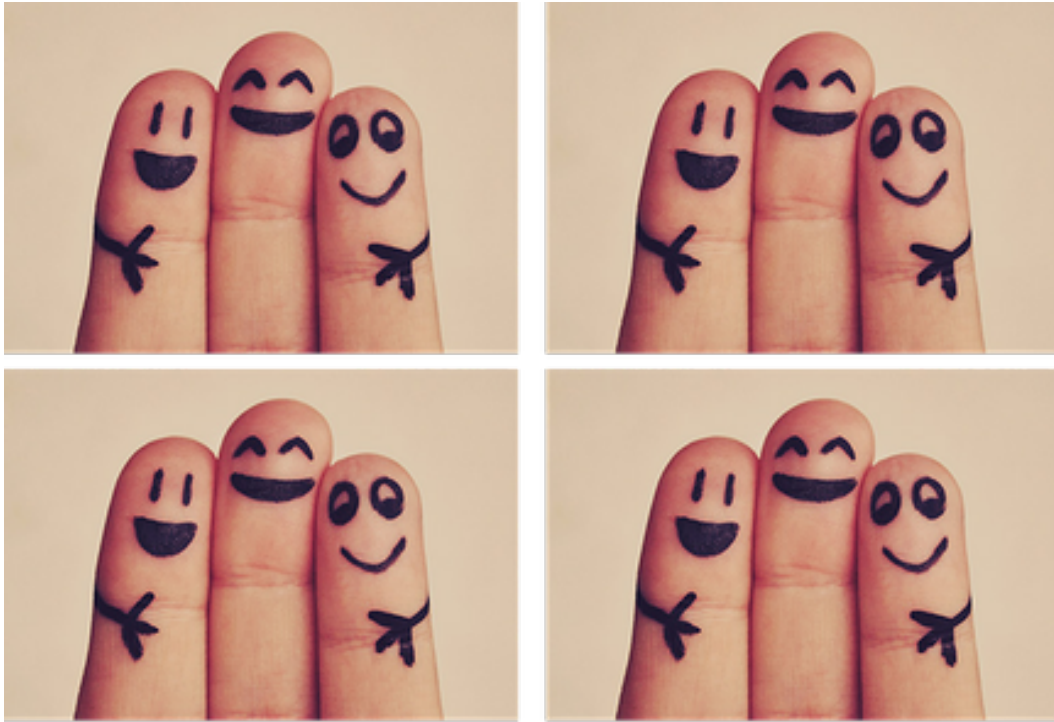
*Figure 3.1:* A nice picture.



*Figure 3.2:* Horizontally aligned images.



*Figure 3.3:* Vertically aligned images.

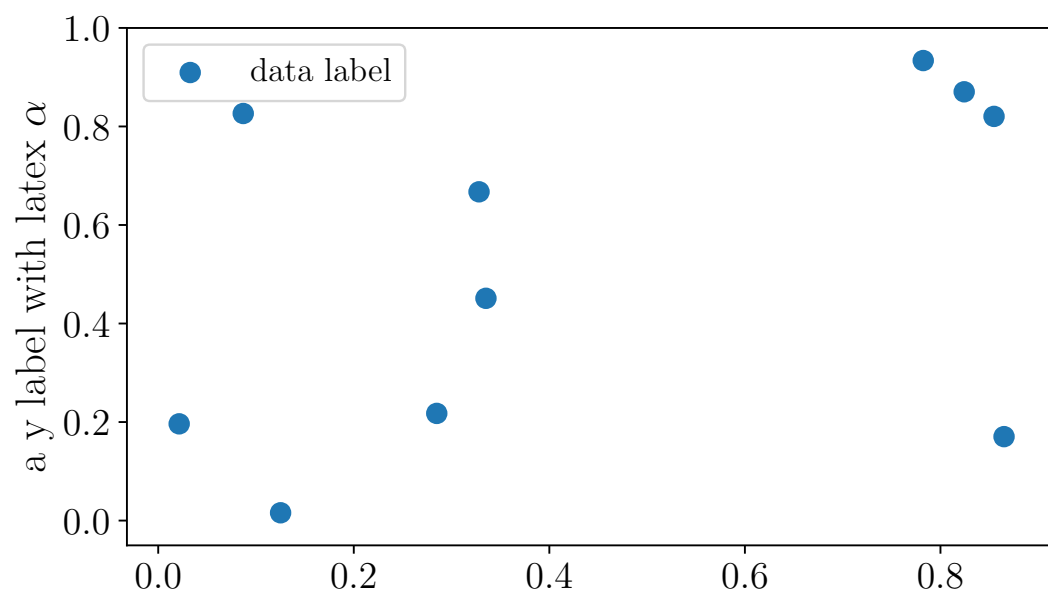


*Figure 3.4:* Images aligned in a grid.

### 3.1 Displaying a plot with its code

*Code 3.1:* The plotting code for a matplotlib figure (fig. 3.5).

```
1 plt.scatter(np.random.rand(10), np.random.rand(10),  
2             label='data label')  
3 plt.ylabel(r'a y label with latex  $\alpha$ ')  
4 plt.legend();
```



*Figure 3.5:* A matplotlib figure, with the caption set in the markdowncell above the figure.



## 4 Tables (with pandas)

*Code 4.1:* The plotting code for a pandas Dataframe table (table 4.1).

```
1 df = pd.DataFrame(np.random.rand(3,4), columns=['a', 'b', 'c', 'd'])
2 df.a = ['$\delta$', 'x', 'y']
3 df.b = ['l', 'm', 'n']
4 df.set_index(['a', 'b'])
5 df.round(3)
```

*Table 4.1:* An example of a table created with pandas dataframe.

	a	b	c	d
0	$\delta$	l	0.583	0.279
1	x	m	0.914	0.021
2	y	n	0.333	0.116

## 5 Equations (with ipython or sympy)

$$a = b + c \quad (5.1)$$

**Code 5.1:** The plotting code for a sympy equation (eq. 5.2).

```
1 f = sym.Function('f')
2 y,n = sym.symbols('y \alpha')
3 f = y(n)-2*y(n-1/sym.pi)-5*y(n-2)
4 sym.solve(f,y(n),[1,4])
```

$$\left(\sqrt{5}i\right)^{\alpha}\left(\frac{1}{2}-\frac{2i}{5}\sqrt{5}\right)+\left(-\sqrt{5}i\right)^{\alpha}\left(\frac{1}{2}+\frac{2i}{5}\sqrt{5}\right) \quad (5.2)$$

## 6 Embed interactive HTML (like ipywidgets)

Interactive HTML was created using ipyvvolume and will render below in .html type outputs:

## 7 References

- [1] T. Yu Zelenyak, Kh T. Kholmurodov, A. R. Tameev, A. V. Vannikov, and P. P. Gladyshev. Molecular dynamics study of perovskite structures with modified interatomic interaction potentials. 50(5): 400–405. ISSN 0018-1439, 1608-3148. doi:[10.1134/S0018143916050209](https://doi.org/10.1134/S0018143916050209).
- [2] Alec Kirkeminde and Shenqiang Ren. Thermodynamic control of iron pyrite nanocrystal synthesis with high photoactivity and stability. 1(1):49–54. ISSN 2050-7496. doi:[10.1039/C2TA00498D](https://doi.org/10.1039/C2TA00498D).