

ex2-2

March 21, 2025

1 ex2-2 *Exercise Svetoslav Botev*

```
[1]: import numpy as np
import matplotlib.pyplot as plt
from astropy.io import fits
from astropy.table import Table
from astropy import units as u
plt.ion()
import os
```

1.1 ex2-2 *installation and printing block*

```
[4]: a = 50.0 * u.meter
b = [23, 45, 88] * u.meter
print(a)
print(b)
```

50.0 m

[23. 45. 88.] m

1.2 ex2-2 *operations block*

```
[5]: np.mean(b)
```

```
[5]: 52 m
```

```
[7]: 15 * u.meter / (3 * u.second)
```

```
[7]: 5  $\frac{\text{m}}{\text{s}}$ 
```

```
[9]: x = 62 * u.parsec
print(x)
```

62.0 pc

```
[10]: y = 45 * u.parsec
```

```
[11]: x / y
```

```
[11]: 1.3777778
```

```
[15]: z = x.value  
z
```

```
[15]: 62.0
```

```
[16]: z = x.value / y.value
```

```
[17]: z
```

```
[17]: 1.3777777777777778
```

```
[18]: np.around(z, decimals=2)
```

```
[18]: 1.38
```

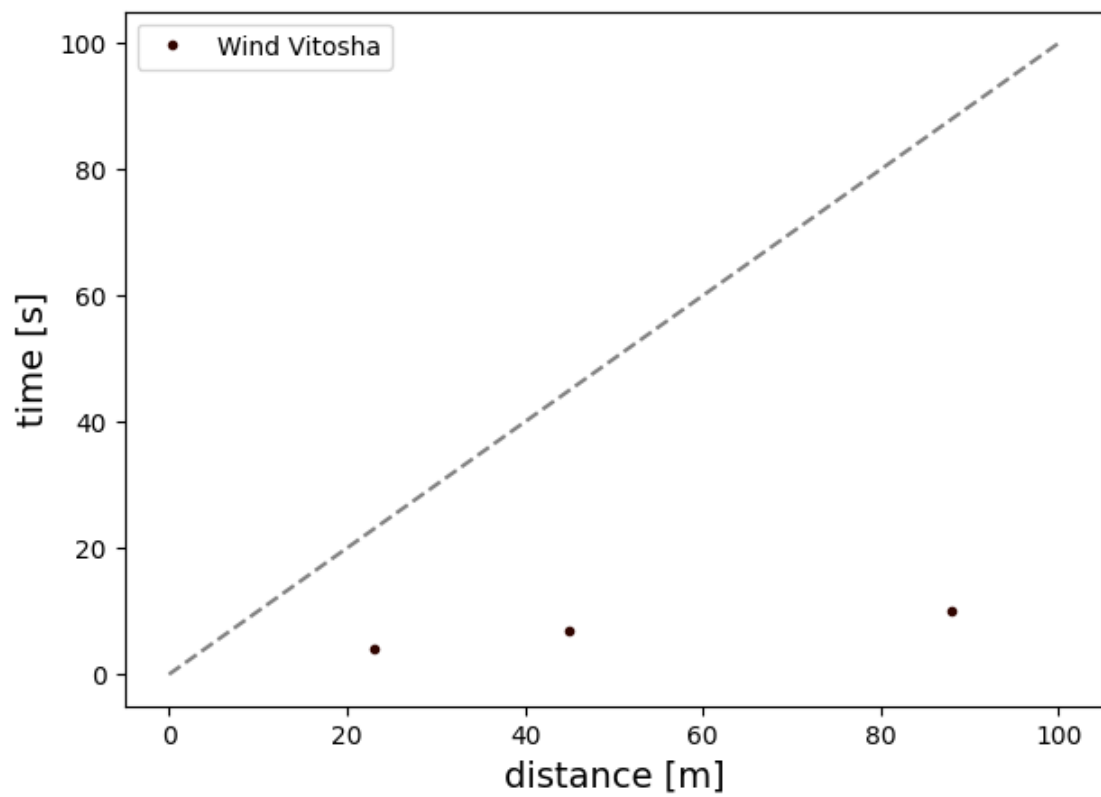
```
[19]: type(x)
```

```
[19]: astropy.units.quantity.Quantity
```

1.3 ex2-2 *plotting block*

```
[37]: plt.figure(figsize=(7,5))  
plt.plot(b, c, ls='.', color='#300500', marker='.', label='Wind Vitosha')  
plt.xlabel("distance [m]", fontsize=14)  
plt.ylabel("time [s]", fontsize=14)  
plt.legend()  
  
l1 = np.linspace(0, 100, 2)  
l2 = np.linspace(0, 100, 2)  
plt.plot(l1, l2, color='gray', ls='--')
```

```
[37]: [<matplotlib.lines.Line2D at 0x7d942ffe54e0>]
```



```
[20]: c = [4, 7, 10] * u.second
```

```
[ ]:
```