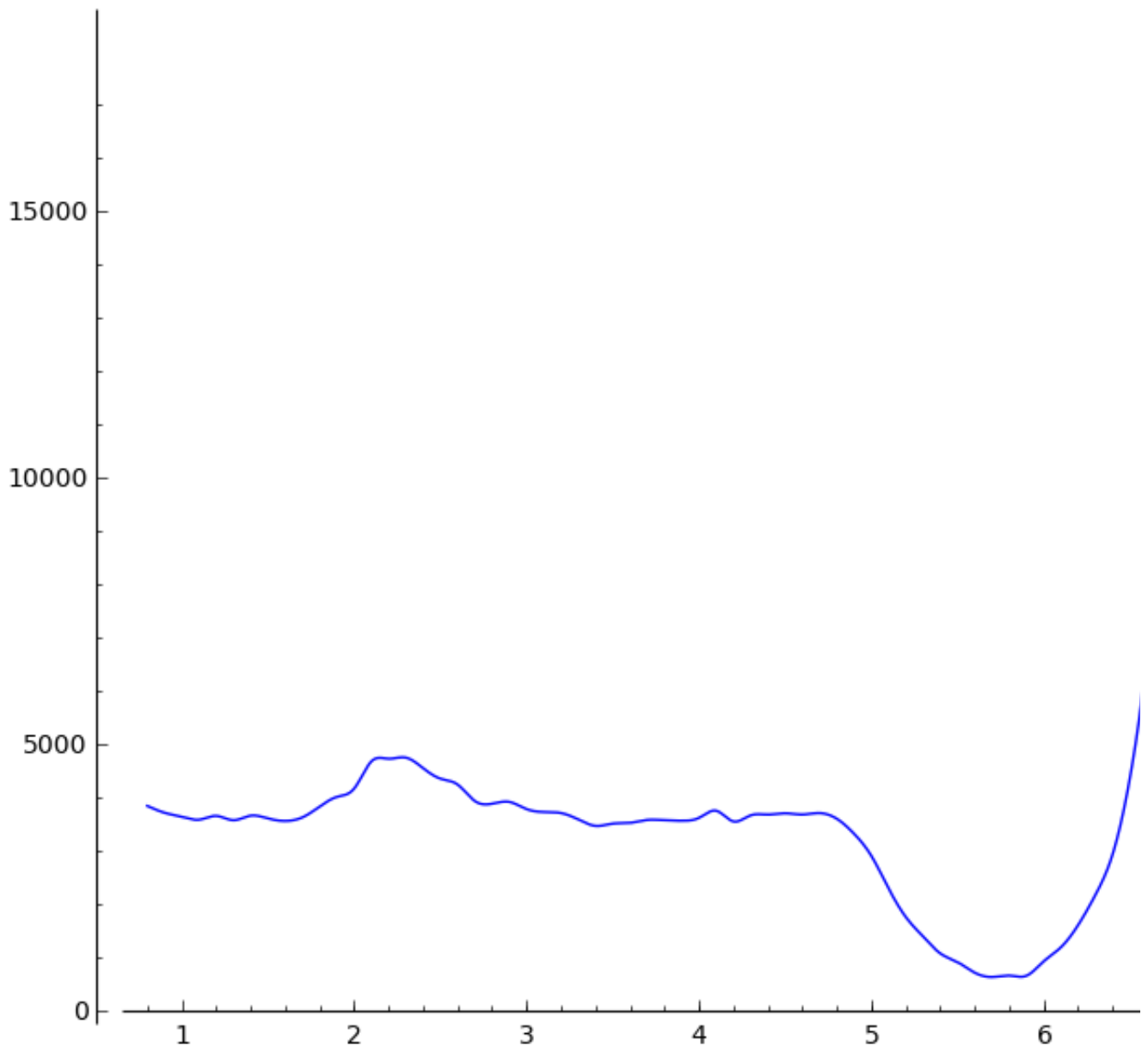
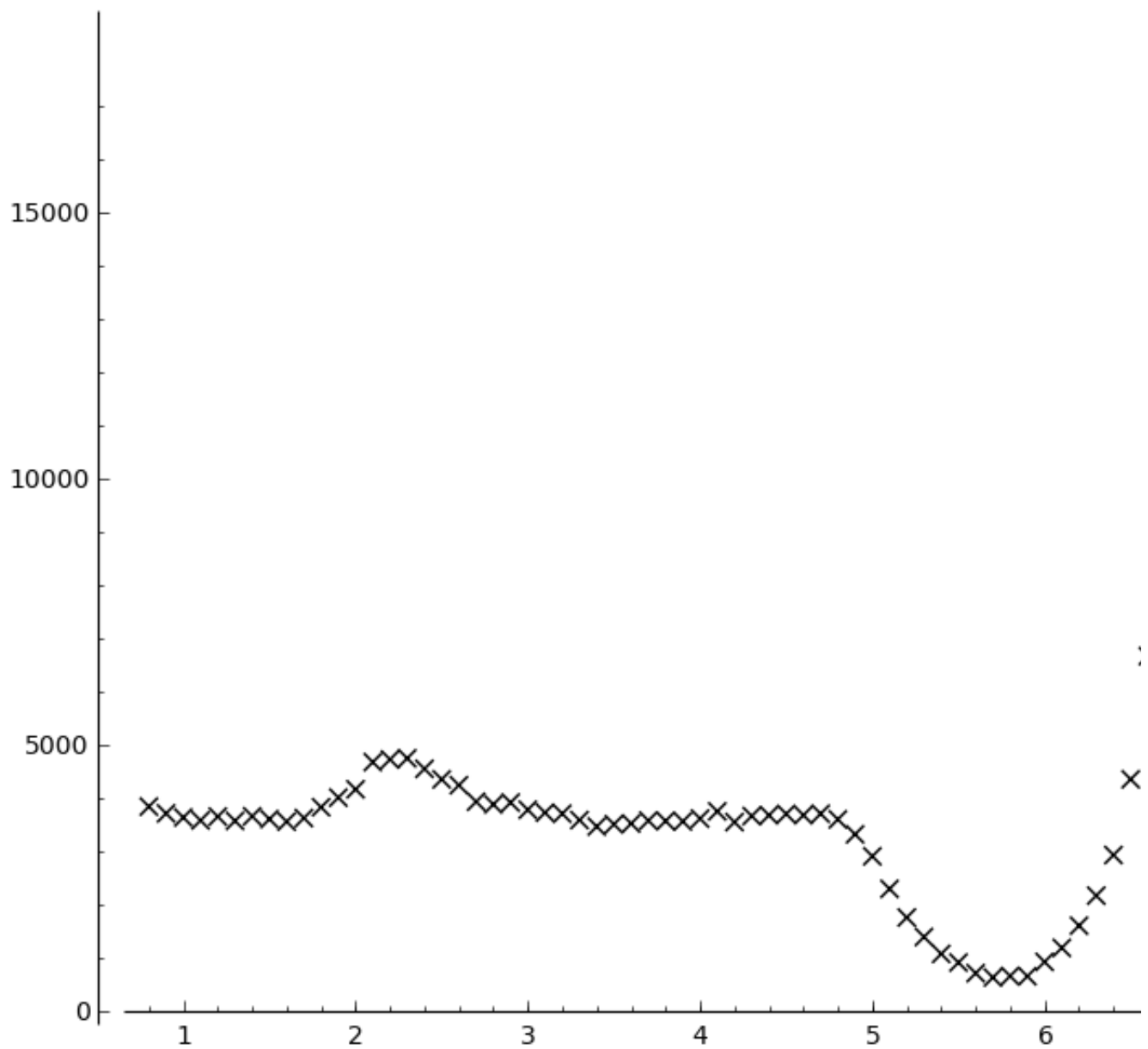


Experiment 4 - NaI

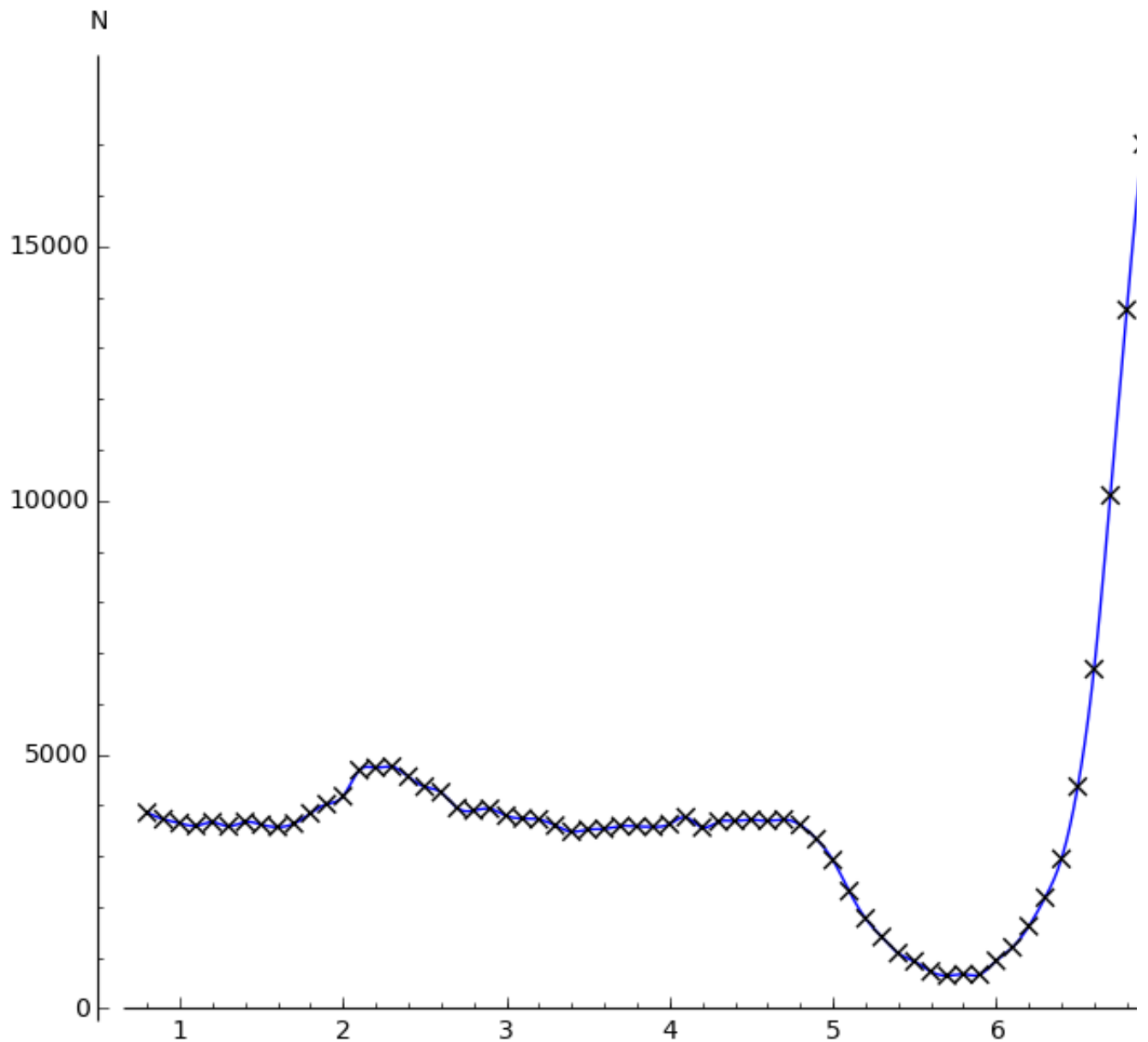
```
data = open(DATA + "GData").read()
data = data.split("\n")
data = [i.split(",") for i in data if i]
X = [float(i[0]) for i in data]
Y = [float(i[1]) for i in data]
s = spline(zip(X,Y))
P1 = plot(s, xmin = 0.8, xmax = 8.0)
P1
```



```
P2 = scatter_plot(zip(X,Y),marker="x")
P2
```



```
show(P1+P2, axes_labels=["U/V", "N"])
```



```
save(P1+P2, axes_labels=["U/V", "N"], filename =
"/usr/tmp/plot1.pdf")
```

```
Max = find_local_maximum(s, 6, 8)
V = Max[1]
Max
```

```
(18424.035222346723, 6.9959497250444445)
```

```
y = lambda x:s(x) - Max[0]/2
V
```

```
6.9959497250444445
```

```
V1 = find_root(y, 6, 7)
V1
```

```
6.675689143034632
```

```
Vr = find_root(y,7,8)
Vr
```

7.3106975632969196

```
dV = Vr - V1
dV
```

0.6350084202622872

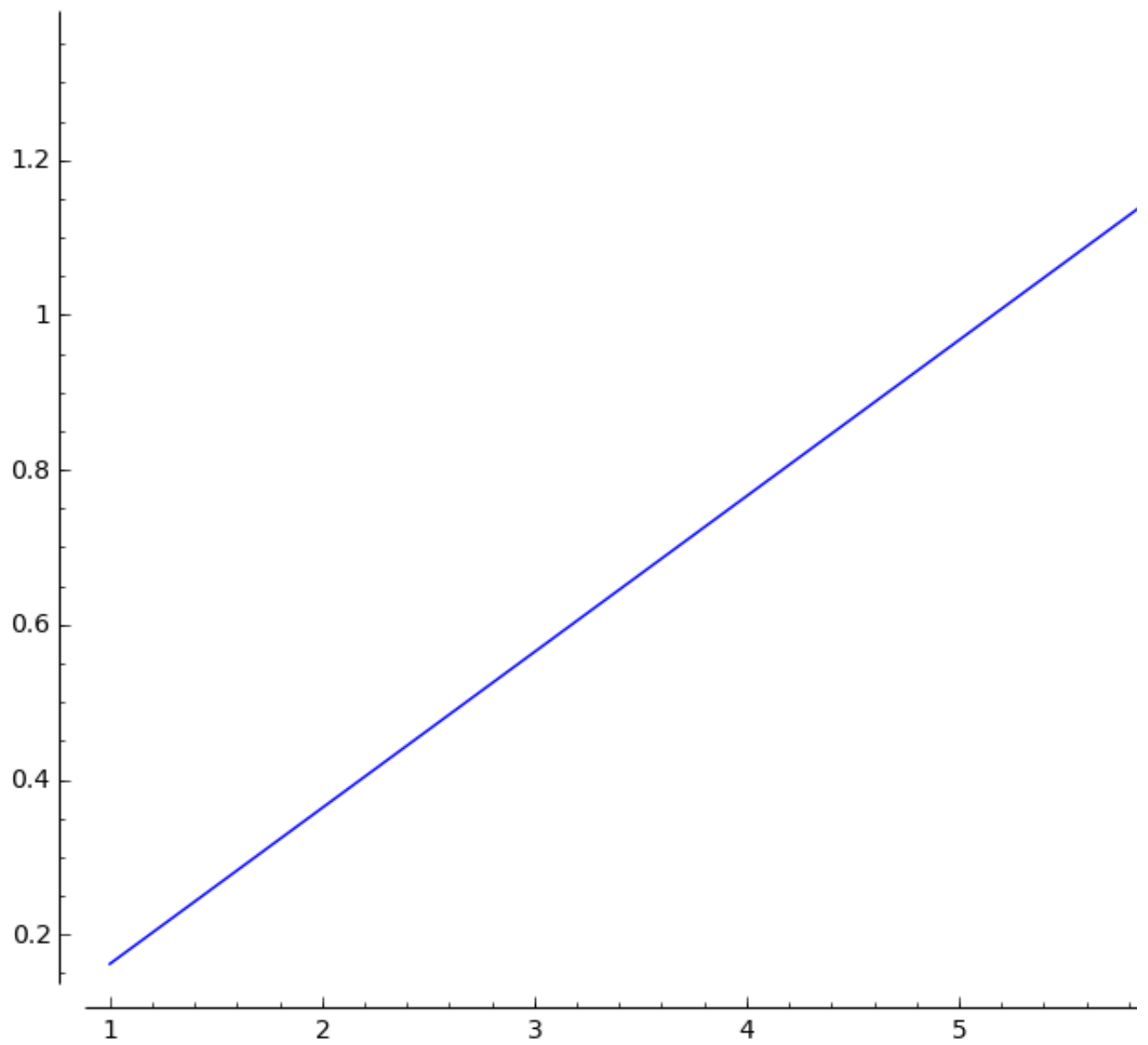
```
e = dV/V
e
```

0.090768007950236249

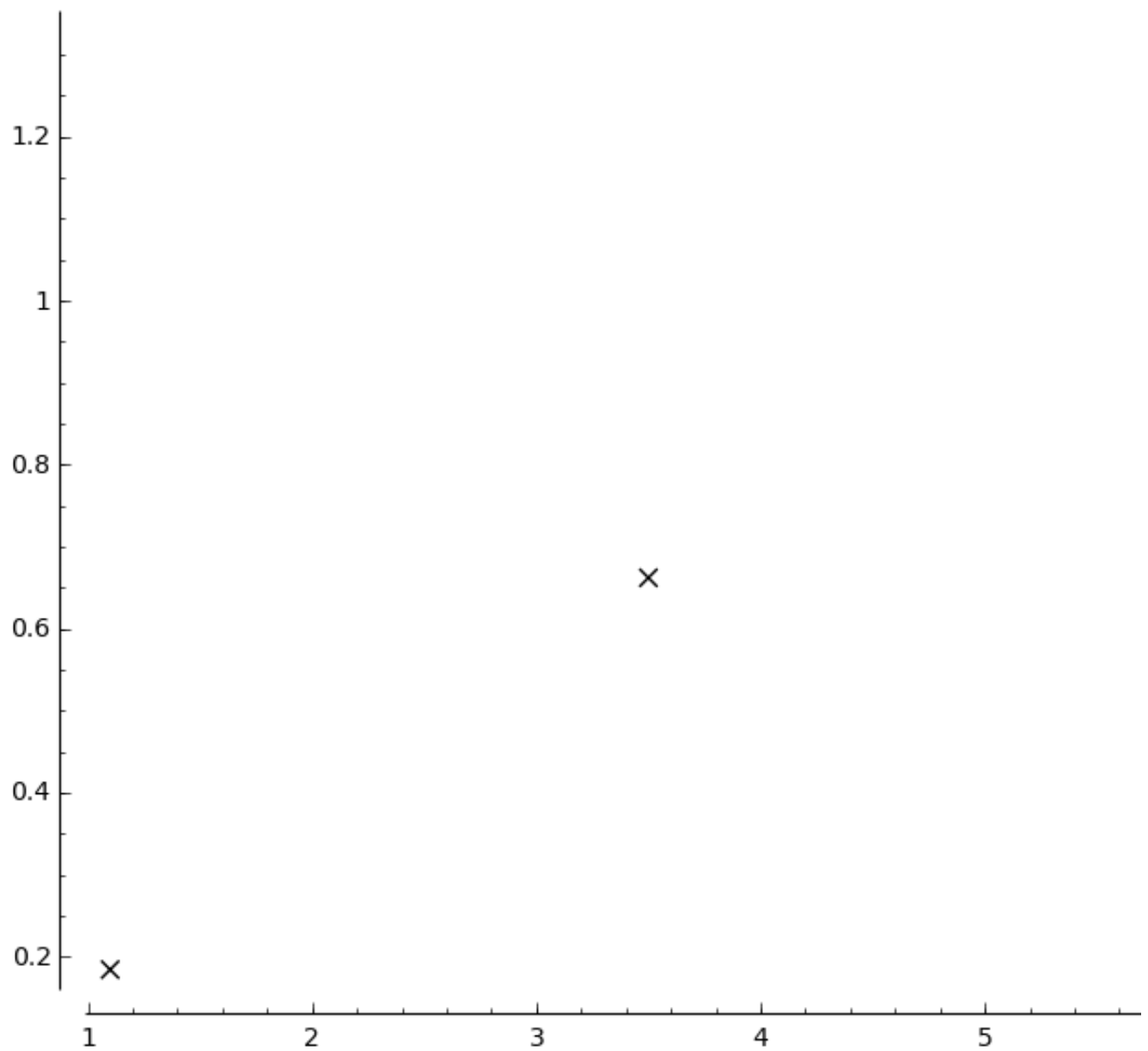
```
from scipy import stats
cali = [[3.5,0.662],[1.1,0.184],[6.8,1.33],[6.0,1.17]]
res = stats.linregress([i[0] for i in cali],[i[1] for i in cali])
res
```

(0.20131434282858571, -0.03921739130434776, 0.9999898684004398,
1.0131599560203604e-05, 0.00064079191869478652)

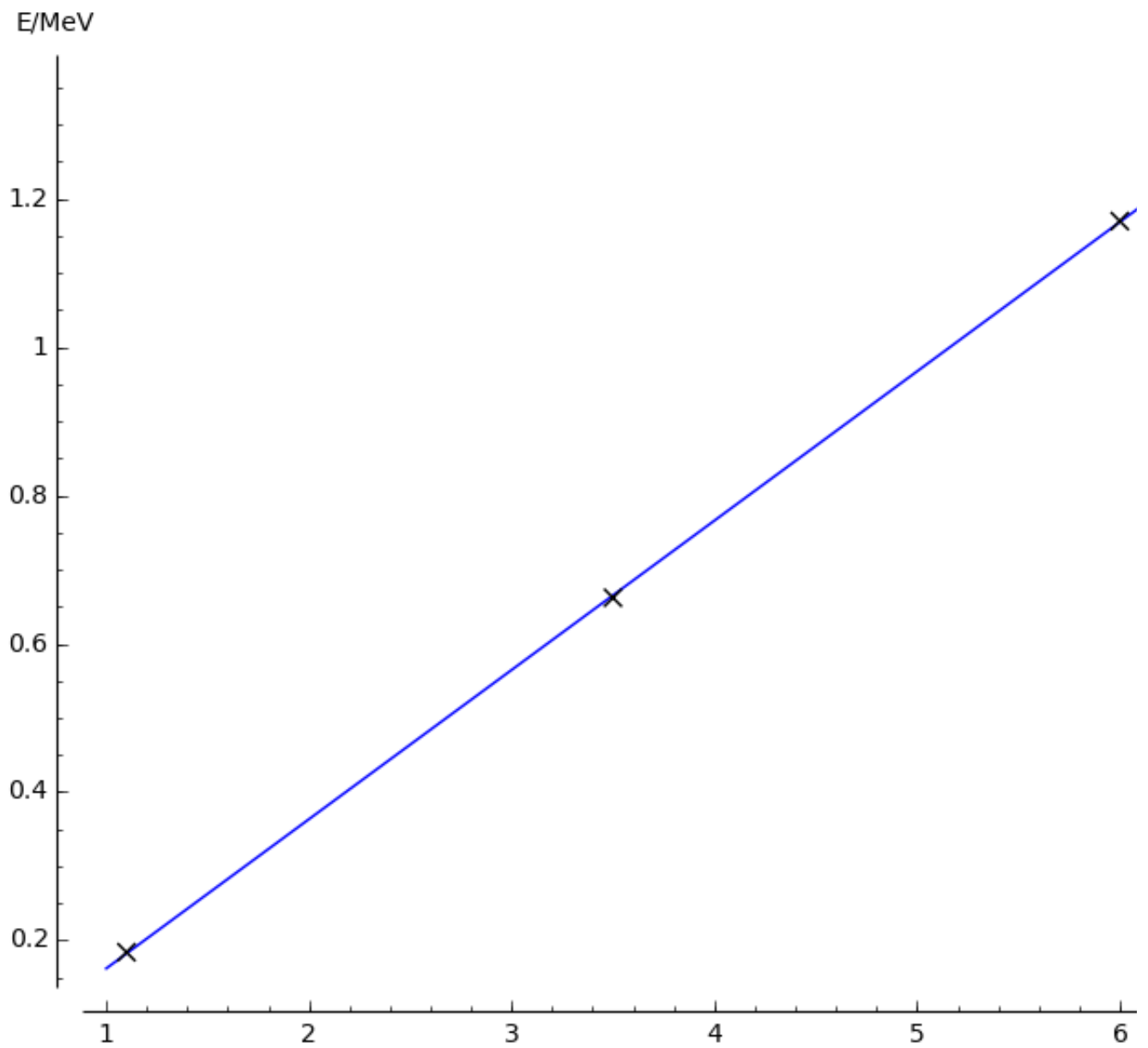
```
var("x y")
y(x) = res[0]*x + res[1]
P1p = plot(y,1,7)
P1p
```



```
P2p = scatter_plot(cali, marker="x")  
P2p
```



```
show(P1p + P2p, axes_labels = ["U/V", "E/MeV"])
```



```
save(P1p + P2p, axes_labels = ["U/V", "E/MeV"], filename =  
"/usr/tmp/plot2.pdf")
```