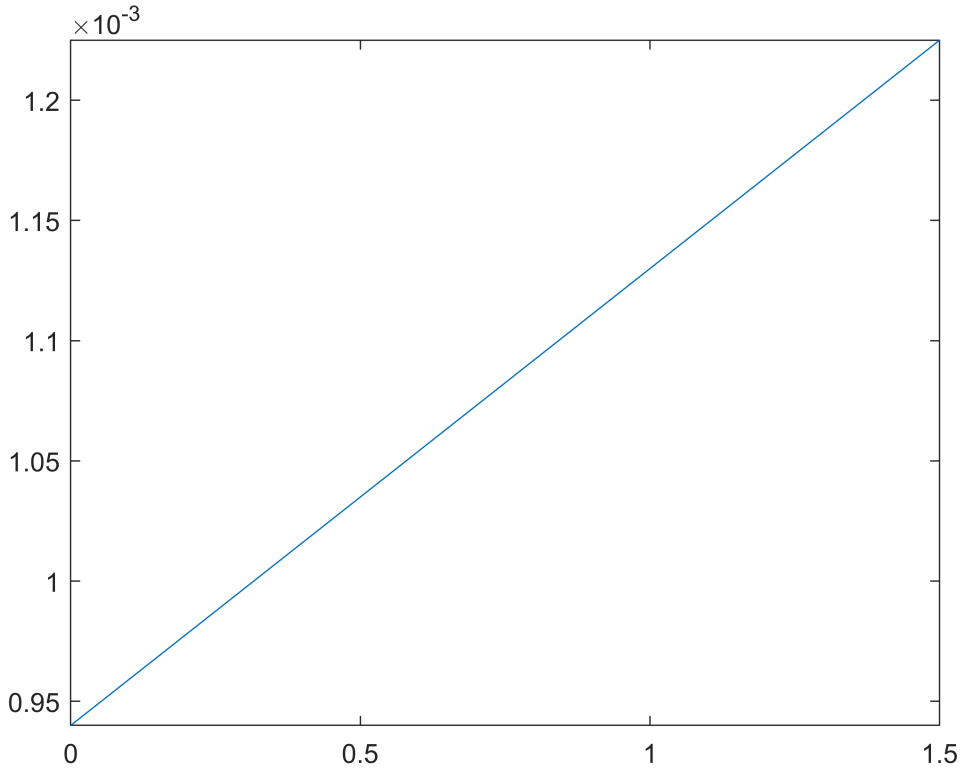
```
clear all
close all
m=1.9*10^-4;q=0.94*10^-3;
stdvoltaggi=5e-8;randomError=5e-9;
finestra=0.00005;
f=@(x) m*x+q;
fplot(f,[0 1.5])
```




```
z=linspace(0.01,1.5,20);
voltaggi=[];
pesi=[];
for e=z
    for i=1:20
        voltaggi=[voltaggi normrnd(f(e)+rand()*randomError,stdvoltaggi)];
        pesi=[pesi e];
    end
end




N=20000;
pend=[];
offset=[]
```

```
offset =
```

```
    []
```

```
numeri=[];
for i=1:N
    pesi=[];
    for e=z
        for i=1:20
            pesi=[pesi e-(rand()*finestra-finestra/2)];
        end
    end
    polinomio=polyfit(pesi',voltaggi',1);
    pend=[pend polinomio(1)];
    offset=[offset polinomio(2)];
end
stdpend=std(pend)
```

```
stdpend =
    3.023178870045708e-10
```

```
stdoffset=std(offset)
```

```
stdoffset =
    2.674511677127402e-10
```

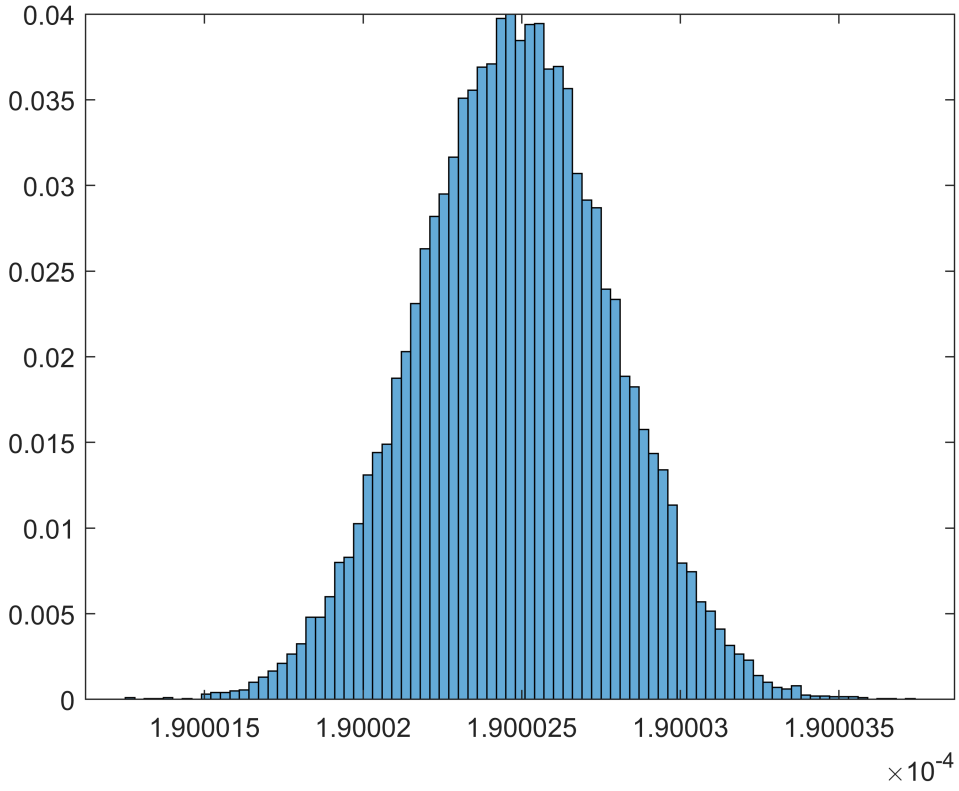
```
meanoff=mean(offset)
```

```
meanoff =
    9.400001541794555e-04
```

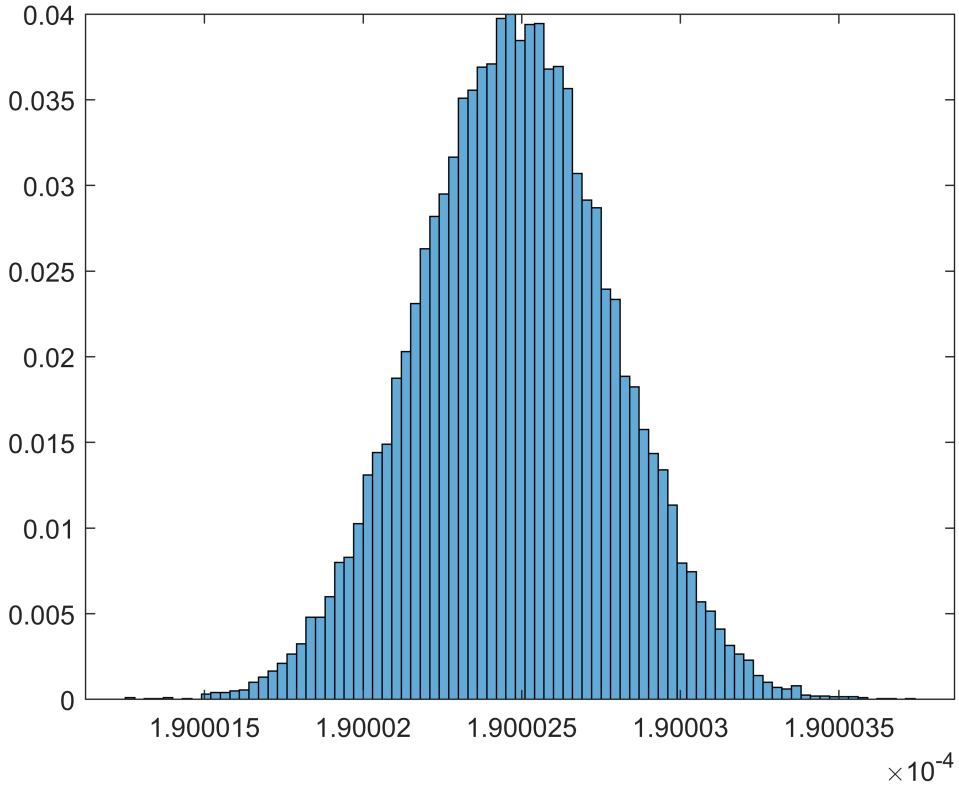
```
meanpend=mean(pend)
```

```
meanpend =
    1.900024787998465e-04
```

```
histogram(pend,'Normalization','probability')
```




```
histogram(pend,'Normalization','probability')
```



```
figure
pmax=[meanpend+stdpend*2 meanoff+stdoffset*2];
pmin=[meanpend-stdpend*2 meanoff-stdoffset*2];
ppendmax=[meanpend+stdpend*2 meanoff-stdoffset*2];
poffmax=[meanpend-stdpend*2 meanoff+stdoffset*2];
ymax=polyval(pmax,pesi);
ymin=polyval(pmin,pesi);
ypmax=polyval(ppendmax,pesi);
yomax=polyval(poffmax,pesi);
plot(ymax,pesi)
hold on
plot(ymin,pesi)
plot(ypmax,pesi)
plot(yomax,pesi)
```