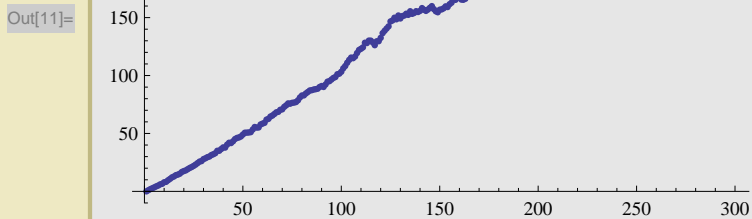


■ Definition of main parameters

```
In[1]:= timesteps = 300;  
nparticles = 300;  
x = Table[0, {nparticles}];  
jump := Table[If[Random[] < 0.5, 1, -1], {nparticles}]  
X := # + jump &
```

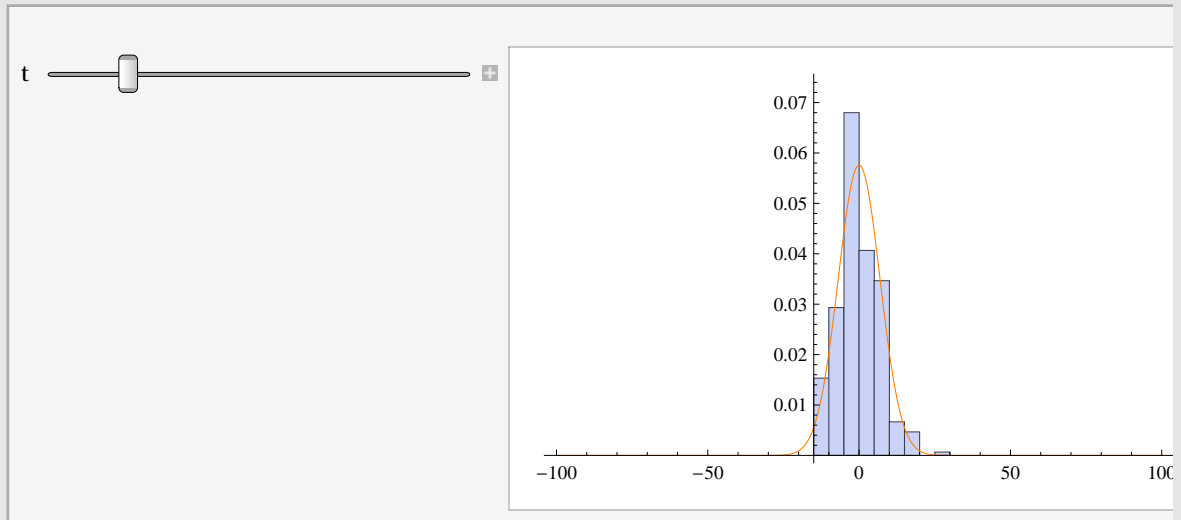
```
In[6]:= traj = NestList[X, x, timesteps];  
time = Table[i, {i, 0, timesteps}];  
xaverage = N[Map[Tr, traj] / nparticles];  
x2average = N[Map[Tr, traj traj] / nparticles];  
x2list = Partition[Riffle[time, x2average], 2];  
ListPlot[x2average]  
Fit[x2list, {1, y, y^2}, y]
```



Out[12]= $-4.15952 + 1.14165 y - 0.000294369 y^2$

In[13]:=

```
Manipulate[Show[Histogram[traj[[t]],
  Automatic, "ProbabilityDensity", PlotRange -> All],
  Plot[Exp[-y^2 / (2 t)] / (Sqrt[2 Pi t]), {y, -100, 100},
  PlotRange -> All, PlotStyle -> Orange]], {t, 1, timesteps, 1}]
```



Out[13]=

```
NestList[f, y, 2]
```

```
{y, f[y], f[f[y]]}
```

```
rr = Table[If[Random[] < 0.5, 1, -1], {10}]
```

```
{-1, -1, 1, 1, -1, 1, -1, -1, -1, -1}
```

```
xx = Table[0, {10}]
```

```
{0, 0, 0, 0, 0, 0, 0, 0, 0, 0}
```

```
xx = yy
```

```
{1, -1, 1, 1, 1, -3, 1, -1, -1, -3}
```

```
yy = xx + rr
```

```
{0, -2, 2, 2, 0, -2, 0, -2, -2, -4}
```

```
ll = {{a, b, c}, {d, e, f}, {g, h, l}}
```

```
{{a, b, c}, {d, e, f}, {g, h, l}}
```

```
Map[Tr, ll]
```

```
{a+b+c, d+e+f, g+h+1}
```

```
ll = {a, b, c}; gg = {A, B, C};
```

```
Partition[Riffle[ll, gg], 3]
```

```
{{a, A, b}, {B, c, C}}
```