Read data

```
In[1]:= a = Import["~/t191229a.csv", "CSV"];
In[2]:= Dimensions[a]
Out[2]= {9881, 11}
In[3]:= b = Transpose[a];
In[4]:= Dimensions[b]
Out[4]= {11, 9881}
In[5]:= time = b[[1]];
```

---

x1 = Tc1, x2 = Tc2, x3 = Tc4, x4 = Tc5, x5 = Tc3 - 1, x6 =Tc 3 - 2, x7 = Tc3 - 3

```
In[6]:= x1 = b[[2]]; x2 = b[[3]];
In[7]:= x3 = b[[4]]; x4 = b[[5]];
In[8]:= x5 = b[[6]]; x6 = b[[7]]; x7 = b[[8]];
```

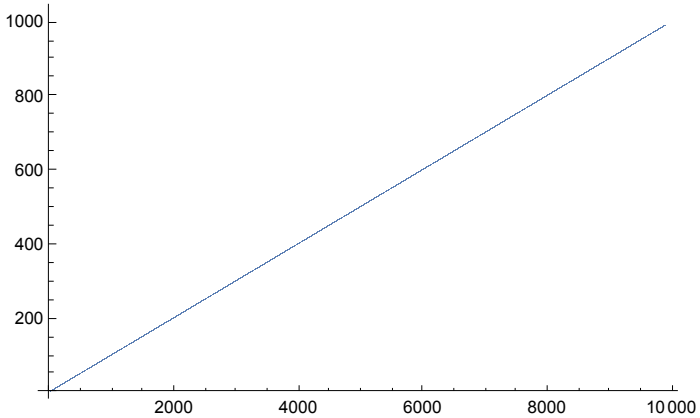
Time Convolution

---

620 - 810

```
In[•]:= time[[2]]
Out[•]= 5.7
In[•]:= time[[8000]]
Out[•]= 805.5
In[•]:= ListPlot[time]
```

Out[•]=



In[9]:=
```
y1 = {}; y2 = {};
```

In[10]:=
```
t1 = {};
```

In[11]:=
```
x1[[1]]
```

Out[11]=
```
19.1875
```

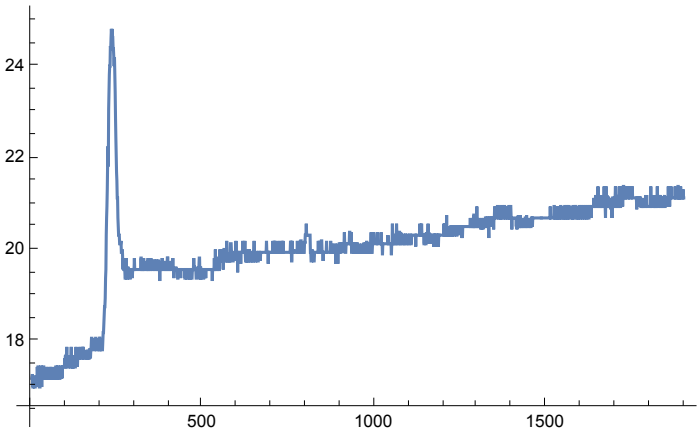
In[12]:=
```
Do[If[time[[i1]] > 619.9  && time[[i1]] < 810.1, AppendTo[y1, x1[[i1]]]],
 {i1, Length[time]}]
```

In[13]:=
```
Do[If[time[[i1]] > 619.9  && time[[i1]] < 810.1, AppendTo[y2, x2[[i1]]]],
 {i1, Length[time]}]
```

In[14]:=
```
Do[If[time[[i1]] > 619.9  && time[[i1]] < 810.1, AppendTo[t1, time[[i1]]]],
 {i1, Length[time]}]
```

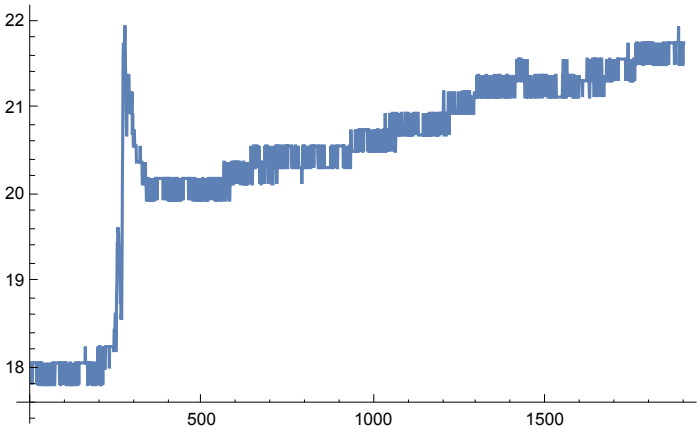
In[15]:=
```
ListPlot[y1, Joined → True, PlotRange → All]
```

Out[15]=



In[16]:=
```
ListPlot[y2, Joined → True, PlotRange → All]
```

Out[16]=

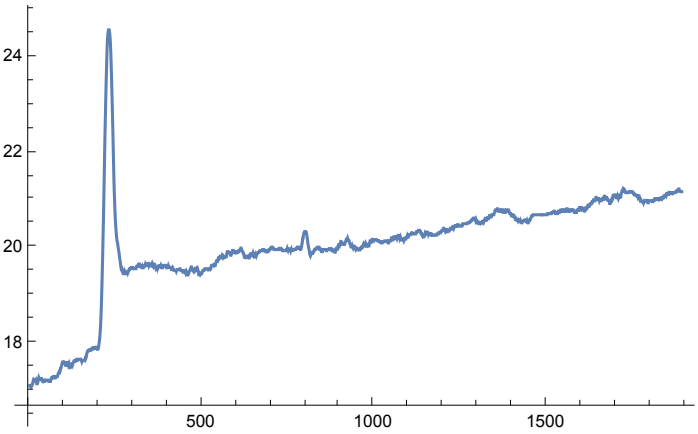


Moving Average

In[59]:=
```
v1 = MovingAverage[y1, 10];
```

In[61]:=
```
ListPlot[v1, Joined → True, PlotRange → All]
```

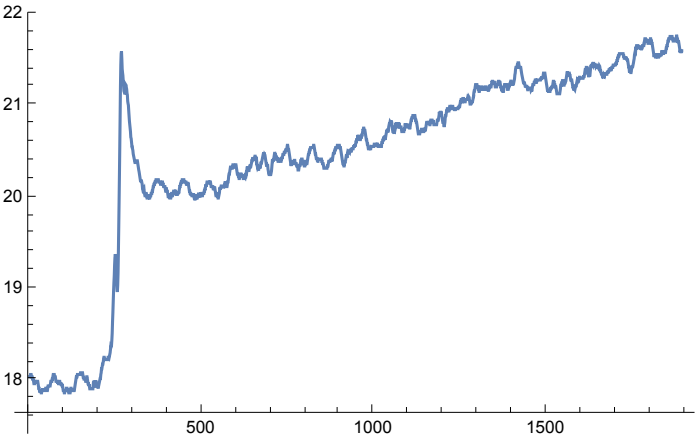
Out[61]=



In[60]:=
```
v2 = MovingAverage[y2, 10];
```

In[62]:=
```
ListPlot[v2, Joined → True, PlotRange → All]
```

Out[62]=



In[63]:=
```
tt1 = MovingAverage[t1, 10];
```

In[31]:=
```
Length[tt1]
```

Out[31]= 1882

In[29]:=
```
Length[v1]
```

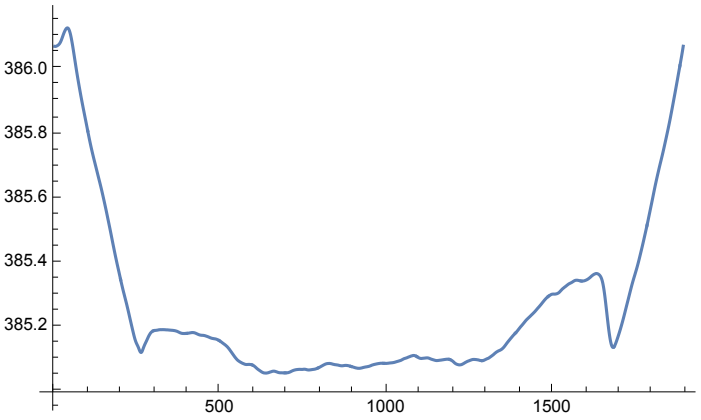
Out[29]= 1882

time correlation

In[64]:=
```
z = (0.1 / 201.) Table[v1.RotateLeft[v2, k], {k, 1, Length[v1]}];
```

In[65]:=
```
ListPlot[z, Joined -> True, PlotRange → All]
```

Out[65]=



In[33]:=
```
vv1 = Table[{tt1[[i]], v1[[i]]}, {i, Length[tt1]}];
```

In[34]:=
```
vv2 = Table[{tt1[[i]], v2[[i]]}, {i, Length[tt1]}];
```

Delay Time

In[73]:=
```
zm = Max[Table[z[[i]], {i, 1, 200}]]
```

Out[73]= 386.128

In[74]:=
```
x = {}
```

Out[74]= { }

In[75]:=
```
Do[If[z[[i]] == zm, AppendTo[x, i]], {i, Length[z]}]
```

In[76]:=
```
x[[1]]
```

Out[76]= 39

In[77]:=
```
tl = tt1[[x[[1]]]]
```

Out[77]= 624.25

In[78]:=
```
ts = tt1[[1]]
```

Out[78]= 620.45

In[79]:=

delay time

In[80]:=
```
tl - ts
```

Out[80]= 3.8