

```

In[ ]:= a =
      Import["~/SL_2024-03-13_H11_M34_S52/L_2024-03-13_H11_M34_S52nz.csv", "CSV"];

In[ ]:= Dimensions[a]
Out[ ]:=
      {91498, 11}

In[ ]:= at = Transpose[a];

In[ ]:= Dimensions[at]
Out[ ]:=
      {11, 91498}

```

N = 10000~40000

cross correlation (2) / Tc 4 vs Tc 5

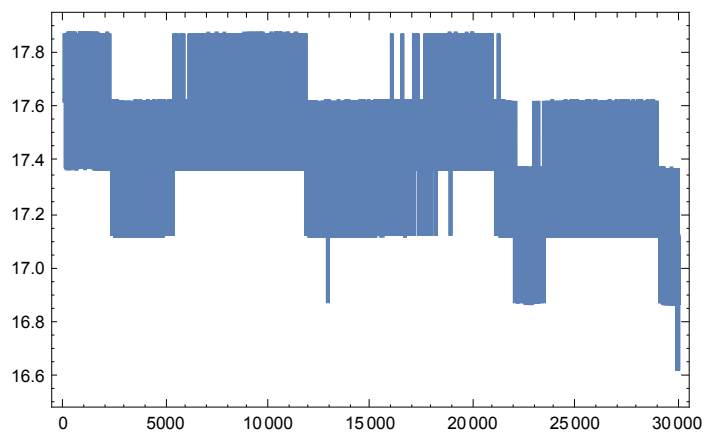
```

In[57]:= b1 = Table[at[[4, i]], {i, 10000, 40000}];

In[58]:= b2 = Table[at[[5, i]], {i, 10000, 40000}];

In[59]:= ListPlot[b1, Joined → True, PlotRange → All, Axes → False, Frame → True]
Out[59]=

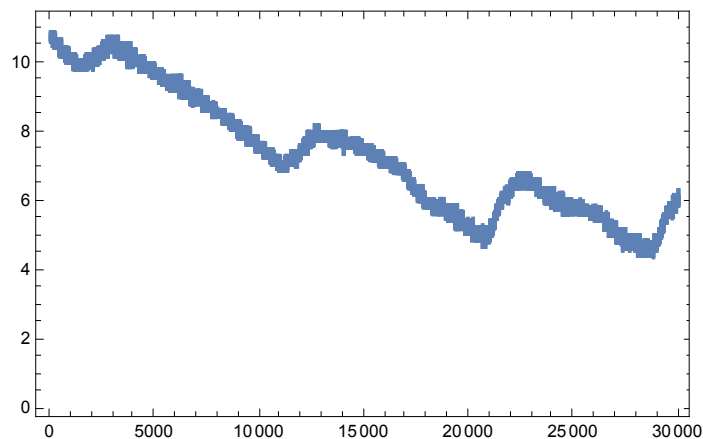
```



```

In[60]:= ListPlot[b2, Joined → True, PlotRange → All, Axes → False, Frame → True]
Out[60]=

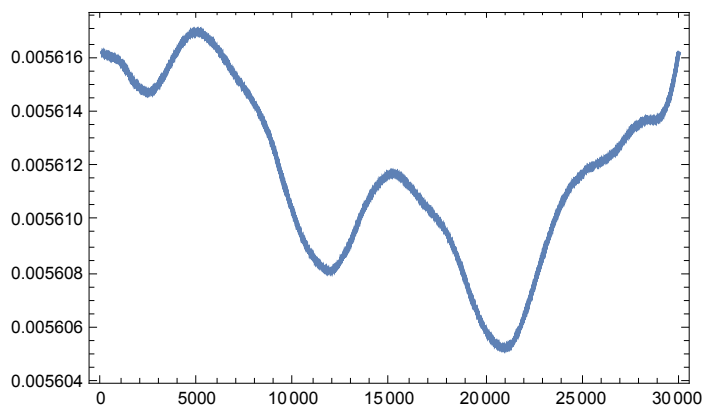
```



```

In[61]:= f1 = Fourier[b1];
In[62]:= f2 = Conjugate[Fourier[b2]];
In[63]:= ff = f1 * f2;
In[64]:= c1 = Re[InverseFourier[ff]] / (Norm[b1] Norm[b2]);
In[65]:= ListPlot[Re[c1], Joined → True, PlotRange → All, Axes → False, Frame → True]
Out[65]=

```



```

In[66]:= mc = Max[c1]
Out[66]=
0.00561697

In[67]:= z = 0;
In[68]:= Do[If[c1[[i]] == mc, z = i], {i, Length[c1]}]
In[69]:= Print[z]
4997

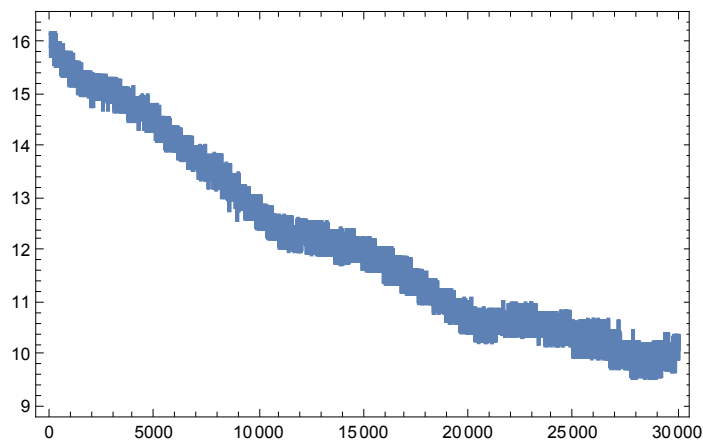
```

cross correlation (2) / Tc 6 vs Tc 7

```

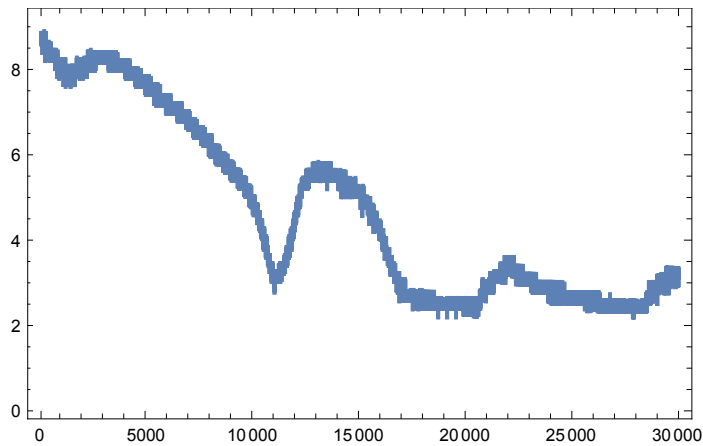
In[70]:= b1 = Table[at[[6, i]], {i, 10 000, 40 000}];
In[71]:= b2 = Table[at[[7, i]], {i, 10 000, 40 000}];
In[72]:= ListPlot[b1, Joined → True, PlotRange → All, Axes → False, Frame → True]
Out[72]=

```



```
In[73]:= ListPlot[b2, Joined → True, PlotRange → All, Axes → False, Frame → True]
```

```
Out[73]=
```



```
In[74]:= f1 = Fourier[b1];
```

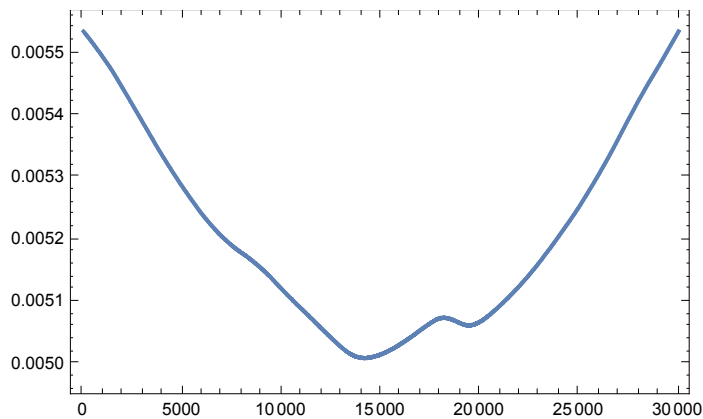
```
In[75]:= f2 = Conjugate[Fourier[b2]];
```

```
In[76]:= ff = f1 * f2;
```

```
In[77]:= c1 = Re[InverseFourier[ff]] / (Norm[b1] Norm[b2]);
```

```
In[78]:= ListPlot[Re[c1], Joined → True, PlotRange → All, Axes → False, Frame → True]
```

```
Out[78]=
```



```
In[79]:= mc = Max[c1]
```

```
Out[79]=
```

```
0.0055346
```

```
In[80]:= z = 0;
```

```
In[81]:= Do[If[c1[i] == mc, z = i], {i, Length[c1]}]
```

```
In[82]:= Print[z]
```

```
1
```