

$00 + 11 \rightarrow T_2^-$

$$f_i = C e^{-\frac{t}{T_2}} + D$$

```
distr00b = {{1, 88.6}, {3, 88.1}, {5, 85.9}, {7, 85.1}, {9, 83.5}, {11, 83.1},
{13, 81.4}, {15, 79.2}, {17, 79}, {19, 76.3}, {21, 74.3}, {23, 73.4},
{25, 71.4}, {27, 68.4}, {29, 68.8}, {31, 67.8}, {33, 63}, {35, 64.3}, {37, 61.9},
{39, 59.6}, {41, 59.3}, {43, 58.4}, {45, 58}, {47, 55.4}, {49, 51.4}, {51, 47.5},
{53, 46.9}, {55, 48.7}, {57, 43.4}, {59, 43.6}, {61, 43.5}, {63, 42.2},
{65, 42.7}, {67, 41.6}, {69, 39.9}, {71, 39.8}, {73, 39.2}, {74, 40.5}};
```

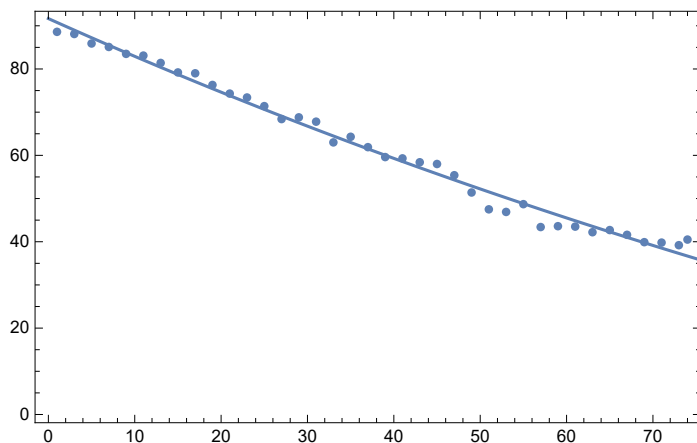
```
Pt1 = C1 Exp[- $\frac{t}{T2}$ ] + C3;
```

```
In[121]:= FindFit[distr00b, Pt1, {C1, T2, C3}, t]
```

```
Out[121]= {C1 → 169.713, T2 → 189.013, C3 → -78.0434}
```

```
fit1 = NonlinearModelFit[distr00b, Pt1, {C1, T2, C3}, t]; Normal[fit1]
-78.0434 + 169.713 e-0.00529065 t
```

```
Show[ListPlot[distr00b], Plot[fit1[x], {x, 0, 80}], Frame → True]
```



$$\text{Error} = \frac{1}{38} \sum_{i=1}^{38} (f_i(i) - d(i))^2:$$

```
error1 = fit1["EstimatedVariance", VarianceEstimatorFunction → (Mean[#^2] &)]
```

```
2.92664
```

$$f_2 = C e^{-\left(\frac{t}{T_2}\right)^2} + D$$

```
In[122]:= Pt2 = C2 Exp[-(t/T2b)^2] + C4;
```

```
FindFit[distr00b, Pt2, {C2, T2b, C4}, t]
```

```
fit2 = NonlinearModelFit[distr00b, Pt2, {C2, T2b, C4}, t];
```

```
Normal[fit2]
```

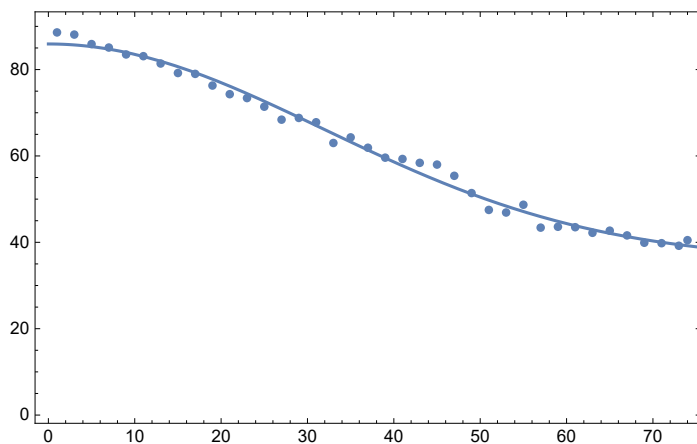
```
Out[123]= {C2 -> 50.107, T2b -> 45.0762, C4 -> 35.8193}
```

```
Out[124]= 35.8193 + 50.107 e^{-0.000492159 t^2}
```

```
In[118]:= error2 = fit2["EstimatedVariance", VarianceEstimatorFunction -> (Mean[#^2] &)]
```

```
Out[118]= 2.29785
```

```
Show[ListPlot[distr00b], Plot[fit2[x], {x, 0, 80}], Frame -> True]
```



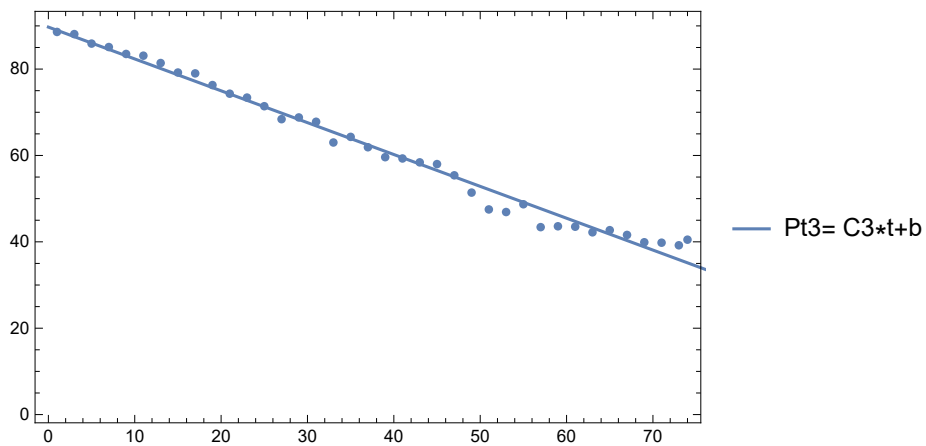
$$f_3 = Ct + D$$

```
fit3 = LinearModelFit[distr00b, t, t]
```

```
FittedModel[ 89.7223 - 0.737594 t ]
```

```
error3 = fit3["EstimatedVariance", VarianceEstimatorFunction -> (Mean[#^2] &)]
3.68182
```

```
Show[ListPlot[distr00b], Plot[fit3[t], {t, 0, 80}], Frame -> True]
```



$$0I + I0 \rightarrow T_2^+$$

$$f_I = C e^{-\frac{t}{T_2}} + D$$

```
In[107]:= distr2 = {{0, 88.6}, {1, 84.7}, {3, 86.8}, {5, 85.8}, {7, 82.7}, {9, 79.8}, {11, 83.8},
  {13, 81}, {15, 79.9}, {17, 82.2}, {19, 78.7}, {21, 77.9}, {23, 75}, {25, 72.7}, {27, 75.9},
  {29, 74.1}, {31, 75}, {33, 71.7}, {35, 70.5}, {37, 73}, {39, 72}, {41, 71.1}, {43, 69.3},
  {45, 65.5}, {47, 67.4}, {49, 66.3}, {51, 66.1}, {53, 64.2}, {55, 62.8}, {57, 61},
  {59, 61.9}, {61, 61.9}, {63, 59.3}, {65, 59.3}, {67, 59.7}, {69, 57.4}, {71, 57}};
```

```
In[125]:= FindFit[distr2, Pt1, {C1, T2, C3}, t]
fit4 = NonlinearModelFit[distr2, Pt1, {C1, T2, C3}, t];
Normal[fit4]
```

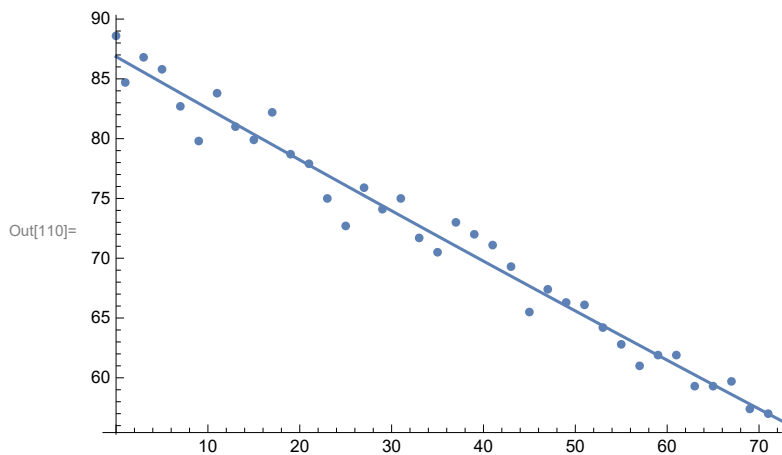
```
Out[125]= {C1 → 415.596, T2 → 951.874, C3 → -328.735}
```

```
Out[126]= -328.735 + 415.596 e-0.00105056 t
```

```
In[109]:= error4 = fit4["EstimatedVariance", VarianceEstimatorFunction → (Mean[#^2] &)]
```

```
Out[109]= 2.01425
```

```
In[110]:= Show[ListPlot[distr2], Plot[fit4[t], {t, 0, 80}, Frame → True]]
```



$$f_2 = C e^{-\left(\frac{t}{T_2}\right)^2} + D$$

```
In[127]:= FindFit[distr2, Pt2, {C2, T2b, C4}, t]
fit5 = NonlinearModelFit[distr2, Pt2, {C2, T2b, C4}, t];
Normal[fit5]
```

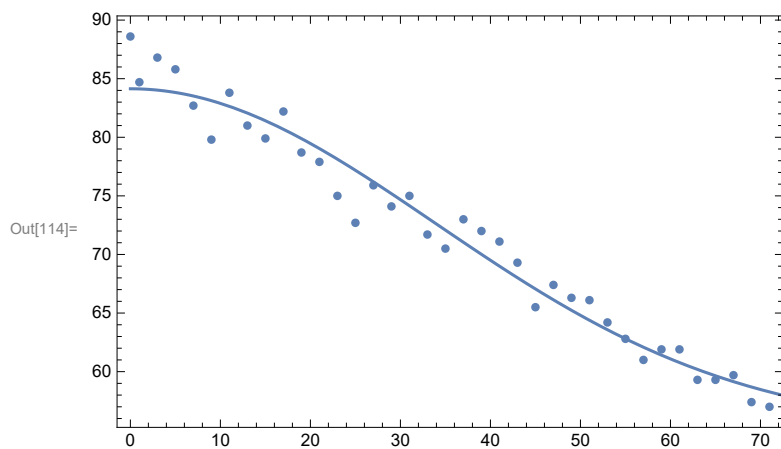
```
Out[127]:= {C2 → 29.0724, T2b → 47.8111, C4 → 55.0659}
```

```
Out[128]:= 55.0659 + 29.0724 e-0.000437465 t2
```

```
In[117]:= error5 = fit5["EstimatedVariance", VarianceEstimatorFunction → (Mean[#^2] &)]
```

```
Out[117]:= 3.22464
```

```
In[114]:= Show[ListPlot[distr2], Plot[fit5[x], {x, 0, 80}], Frame → True]
```



$$f_3 = Ct + D$$

In[116]:= **fit6 = LinearModelFit[distr2, t, t]**

Out[116]= FittedModel [$86.6876 - 0.420865 t$]

In[119]:= **error6 = fit6["EstimatedVariance", VarianceEstimatorFunction -> (Mean[#^2] &)]**

Out[119]= 2.02206

In[120]:= **Show[ListPlot[distr2], Plot[fit6[t], {t, 0, 80}], Frame -> True]**

