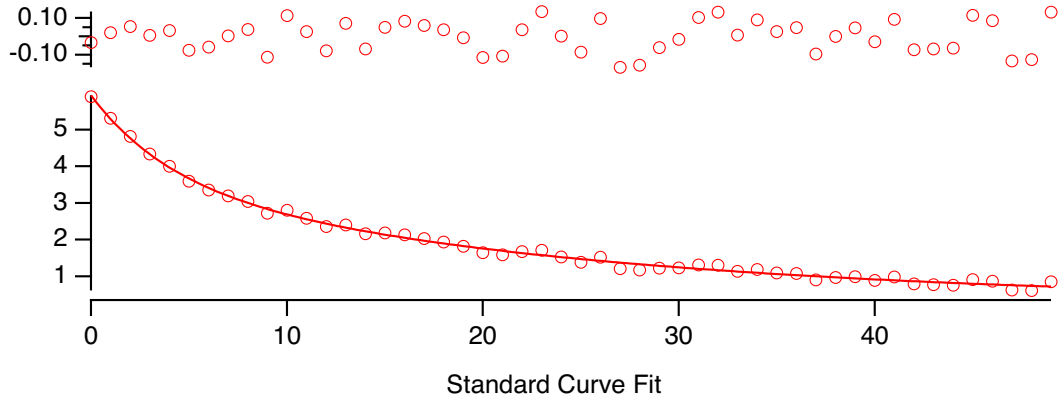
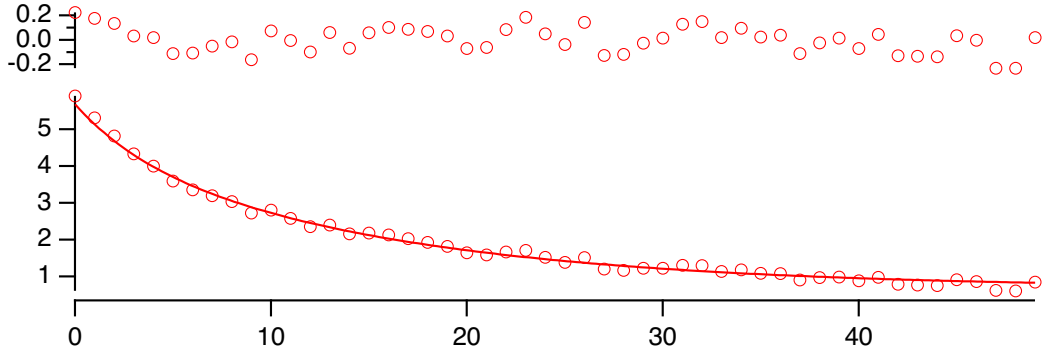


Standard Curve Fit



Curve Fit with Constraints

The output from a curve fit with constraints includes these lines reporting on the fact that constraints were used, and that the constraint was active in the solution:

```
--Curve fit with constraints--
   Active Constraint: Desired:  K1+K3<5  Achieved:  K1+K3=5
```

In most cases you will see a message similar to this one. If you have conflicting constraints, it is likely that one or more constraints will be violated. In that case, you will get a report of that fact. The following commands add two more constraints to the example. The new constraints require values for the individual amplitudes that sum to a number greater than 5, while still requiring that the sum be less than 5 (so these are "infeasible constraints"):

```
Make/O/T CTextWave={"K1 + K3 < 5", "K1 > 3.3", "K3 > 2.2"}
CurveFit dblExp expData /D/R/C=CTextWave
```

In most cases, you would have added the new constraints by editing the constraint wave in a table.

Point	CTextWave
0	K1 + K3 < 5
1	K1 > 3.3
2	K3 > 2.2
3	

The curve fit report shows that all three constraints were violated to achieve a solution:

```
--Curve fit with constraints--
   Constraint VIOLATED:  Desired:  K1>3.3  Achieved:  K1=3.06604
   Constraint VIOLATED:  Desired:  K3>2.2  Achieved:  K3=1.93381
```

Constraint Matrix and Vector

When you do a constrained fit, it parses the constraint expressions and builds a matrix and a vector that describe the constraints.

Each constraint expression is parsed to form a simple expression like $C_0K_0 + C_1K_1 + \ldots \le D$, where the K_i's are the fit coefficients, and the C_i's and D are constants. The constraints can be expressed as the matrix oper-