
```

clc; clear all; close all
s = 1:.01:12; n = numel(s)-1;
%y = [0 2 4.8 5.2 5 5.6];
y1 = 2.*s(1:n/2) - 1; y2 = 11*ones(1,n/2);
ylo = awgn(y1,20,'measured'); y2o = awgn(y2,20,'measured');

y = [ylo y2o];
x0 = [0.9 2.9 4.89 7.85];
% Find the "minimized error".
fun1 = @(x,s) ((x(4)./(x(2)-x(1))).*s - x(1).*x(4)./(x(2)-
x(1))).*(heaviside(s-x(1)) - heaviside(s-x(2))) +...
x(4).*(heaviside(s-x(2))-heaviside(s-x(3))));

x = lsqcurvefit(fun1,x0,s(1:end-1),y)
times = linspace(s(1),s(end-1));
hold on; plot(s(1:end-1),y,'bo')
plot(times,fun1(x,times),'k-','linewidth',2)
legend('Data','Fitted Response'); title('Data and Fitted Curve')
xlim([times(1), times(end)+5])

fun1 = @(x,s) (x(4)./(x(2)-x(1))).*(s - x(1)).*(heaviside(s-x(1)) -
heaviside(s-x(2))) +...
x(4).*(heaviside(s-x(2))-heaviside(s-x(3))));

x = lsqcurvefit(fun1,x0,s(1:end-1),y)
times = linspace(s(1),s(end-1));
figure
hold on; plot(s(1:end-1),y,'bo')
plot(times,fun1(x,times),'k-','linewidth',2)
legend('Data','Fitted Response'); title('Data and Fitted Curve')
xlim([times(1), times(end)+5])

```

Local minimum possible.

lsqcurvefit stopped because the final change in the sum of squares relative to its initial value is less than the default value of the function tolerance.

```

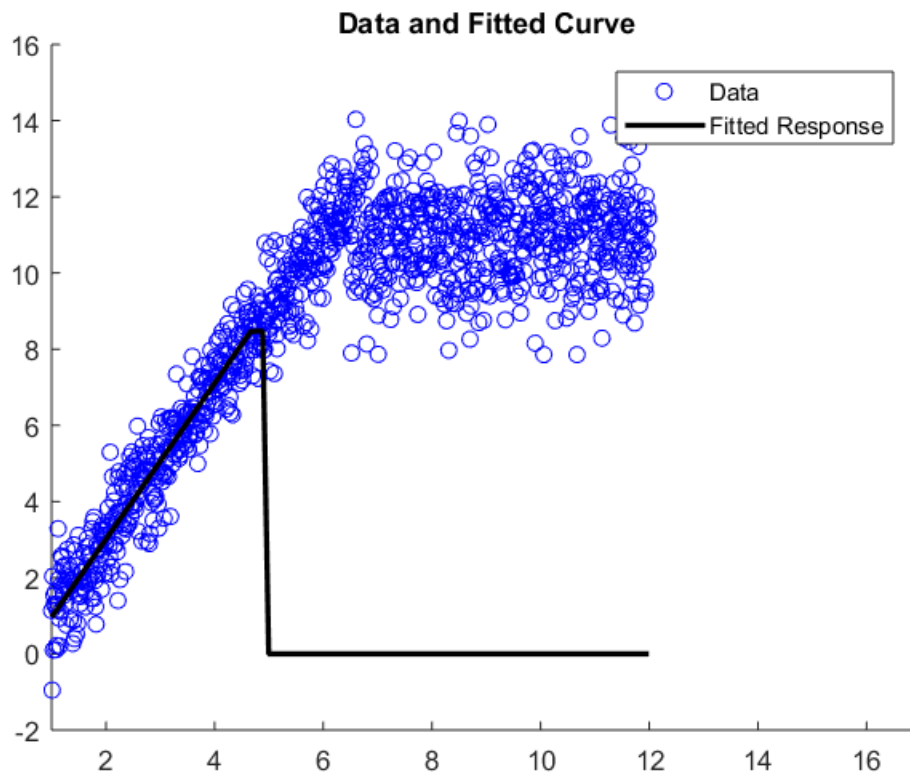
x =
    0.5287    4.6695    4.8900    8.4757

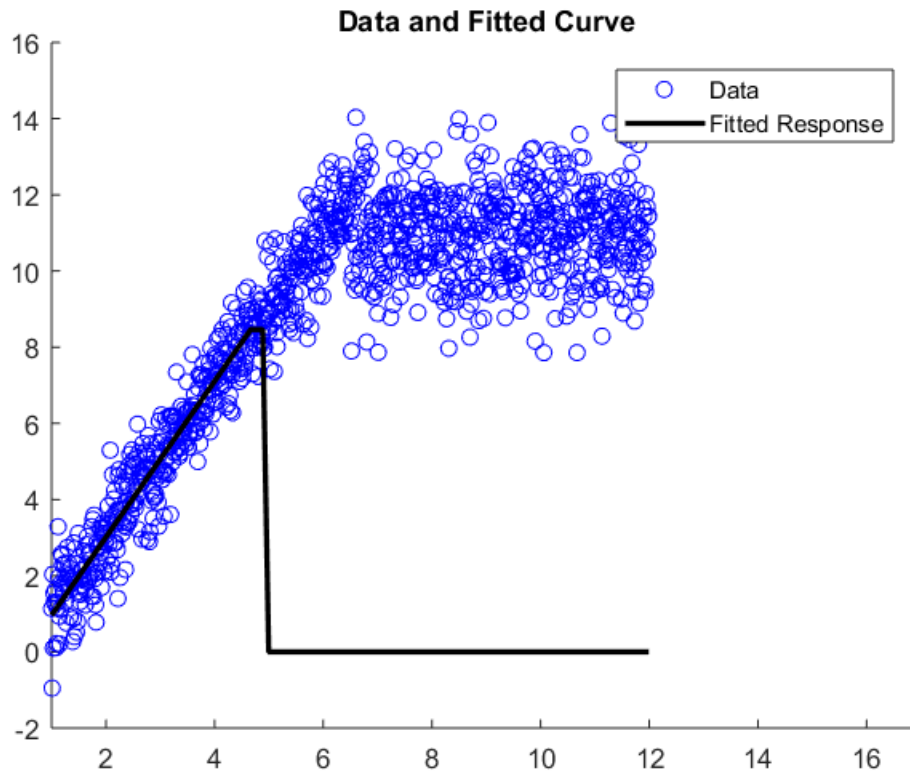
```

Local minimum possible.

lsqcurvefit stopped because the final change in the sum of squares relative to its initial value is less than the default value of the function tolerance.

$x =$
0.5296 4.6630 4.8900 8.4631





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