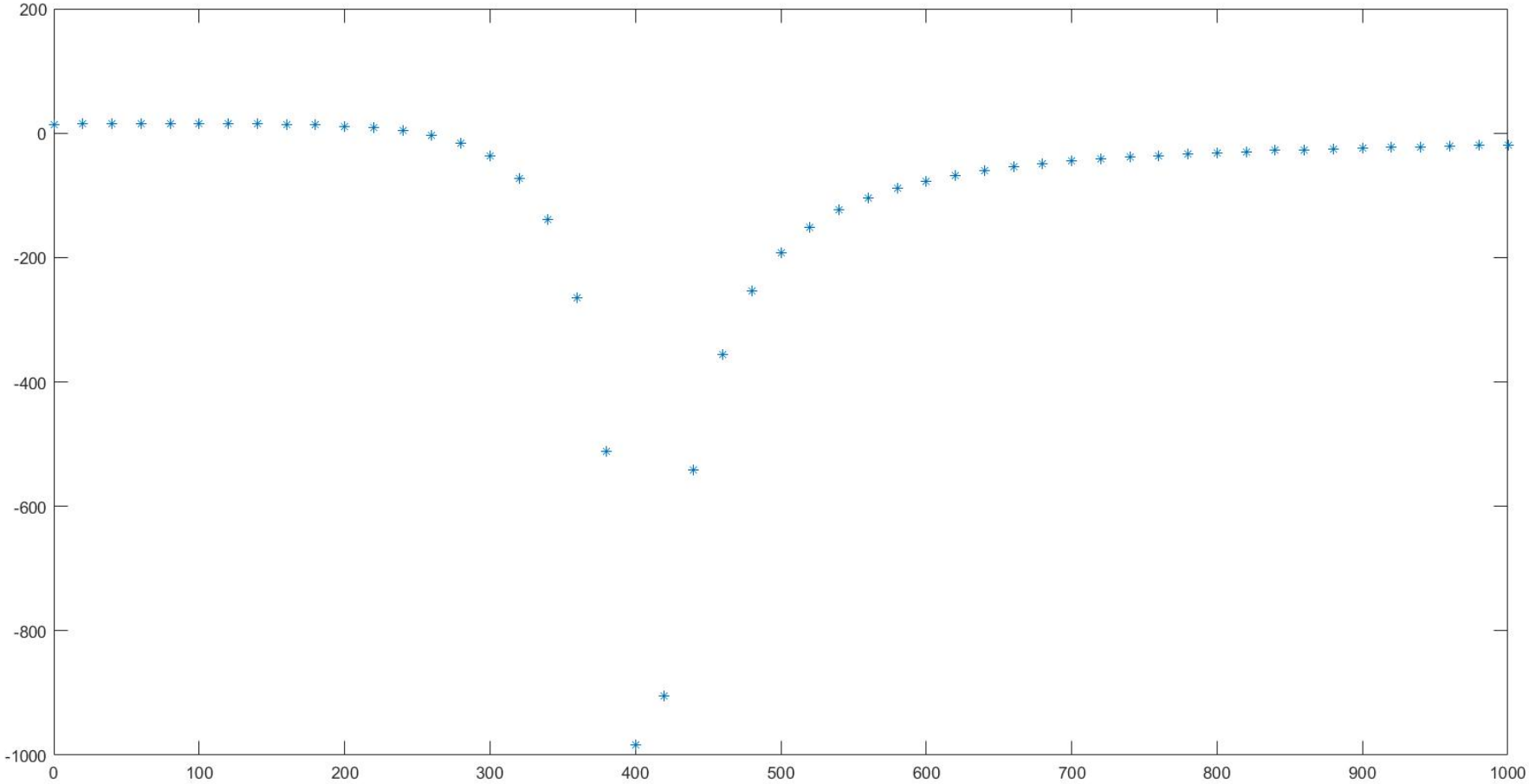
```
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
xi=linspace(0,1000,51);
yi=[14.379 14.637 14.866 15.05 15.167 15.185 15.058 14.719 14.067 12.947 11.12 8.2015 3.5539 -3.9134 -16.148 -36.781 -72.888 -138.8 -264.2 -511.4 -983.21 -904.47 -5
plot(xi,yi,'*');
hold on;
```

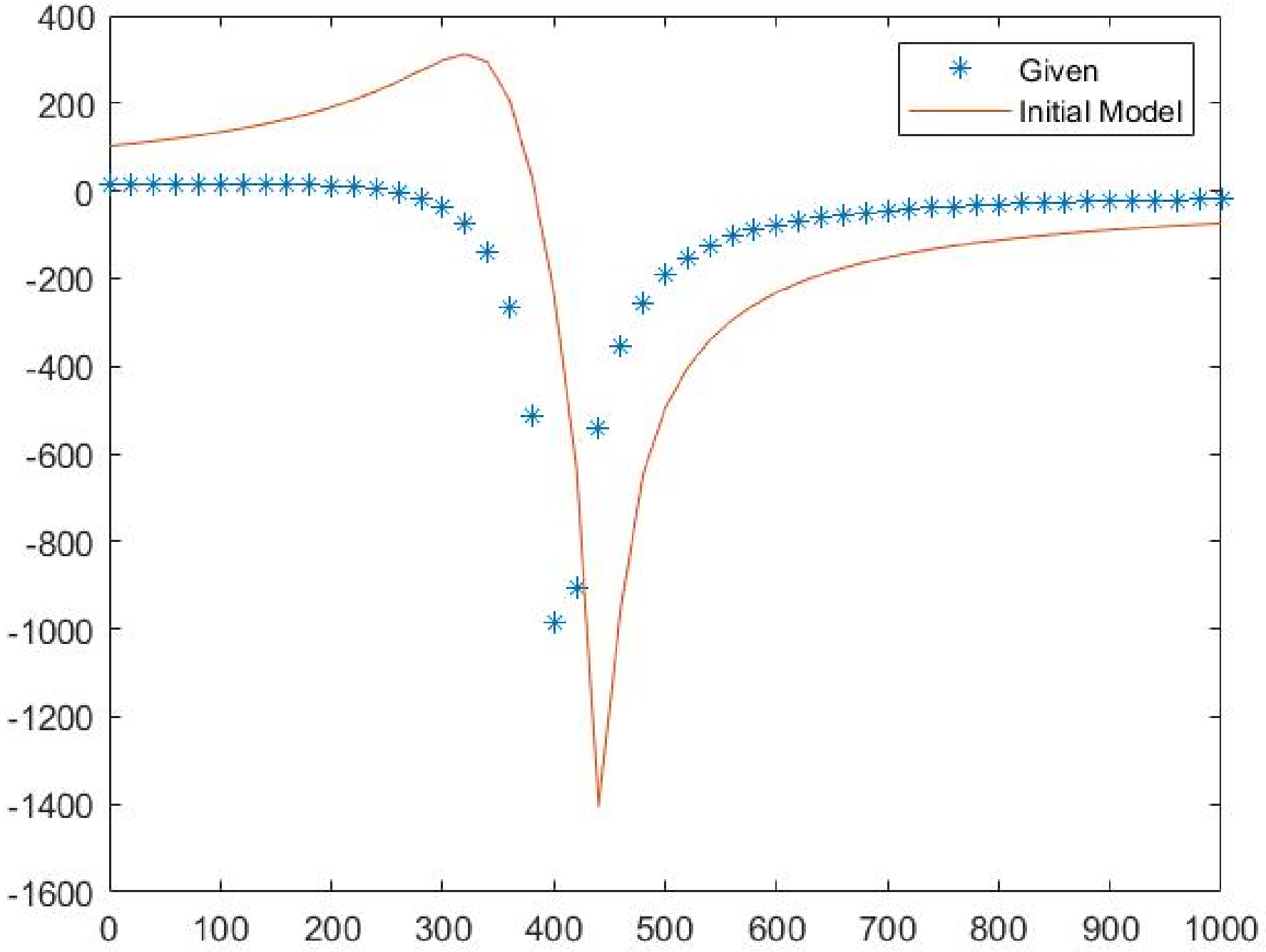

200
0
-200
-400
-600
-800
-1000
0
100
200
300
400
500
600
700
800
900
1000

```m
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
xi=linspace(0,1000,51);
yi=[14.379 14.637 14.866 15.05 15.167 15.185 15.058 14.719 14.067 12.947 11.12 8.2015 3.5539 -3.9134 -16.148 -36.781 -72.888 -138.8 -264.2 -511.4 -983.21 -904.47
plot(xi,yi,'*');
hold on;
k=250;
h=30;
a=50;
alpha=30*pi/180;
xo=400;
nume=(((xi-xo)-(a*cos(alpha))).^2) + ((h-a*sin(alpha))^2);
deno=(((xi-xo)+(a*cos(alpha))).^2) + ((h+a*sin(alpha))^2); V=k*log(nume./deno);
plot(xi,V);
legend('Given','Initial Model')
e=0;
for i = 1:length(xi)
 e=e+((yi(i)-V(i))/yi(i))^2;
end
error=100*((e/length(xi))^0.5)
```

Command Window

```
error =

   1.4252e+03
```

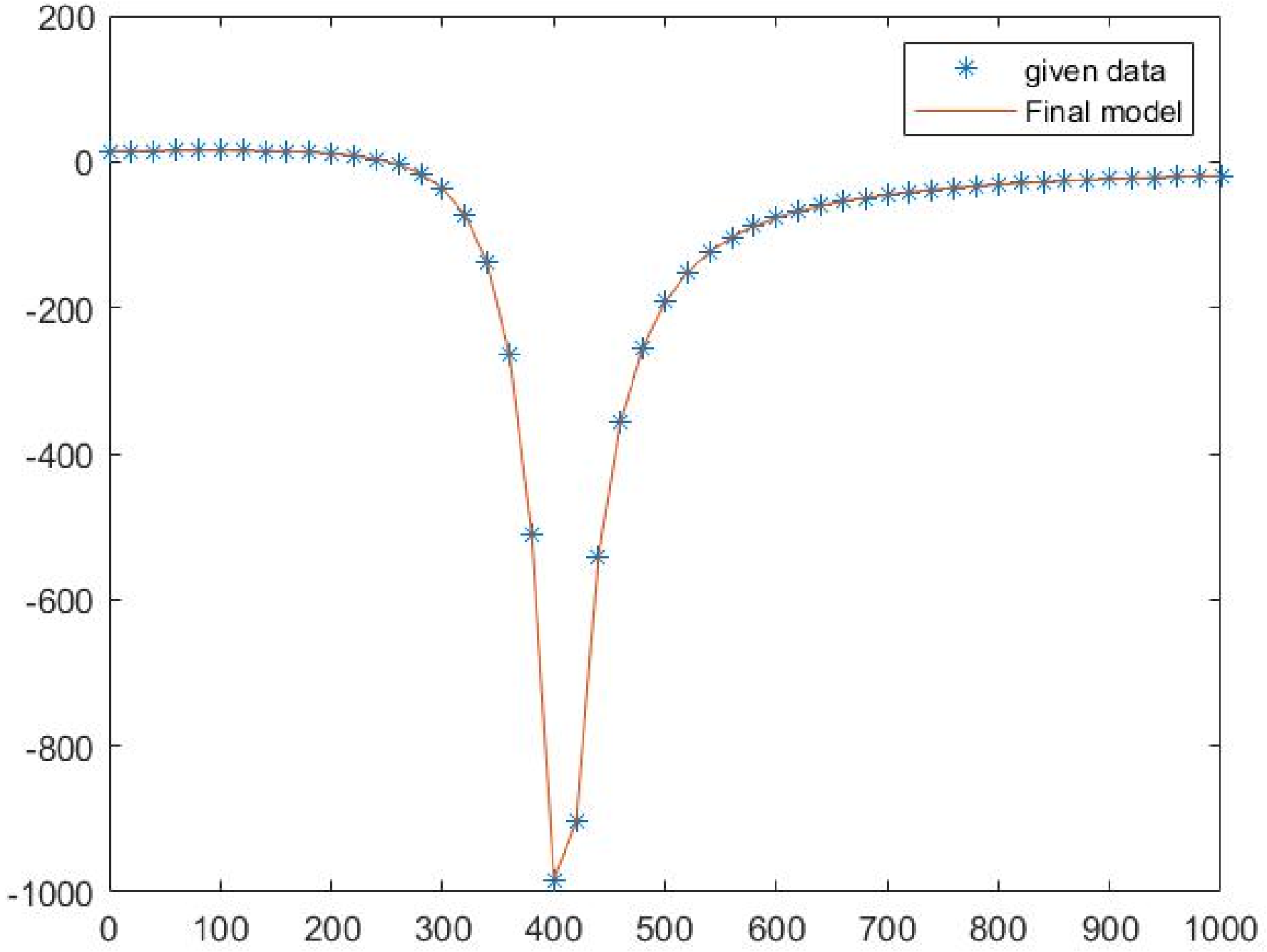

Given
Initial Model
400
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
0
100
200
300
400
500
600
700
800
900
1000

```
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
xi=linspace(0,1000,51);
yi=[14.379 14.637 14.866 15.05 15.167 15.185 15.058 14.719 14.067 12.947 11.12 8.2015 3.5539 -3.9134 -16.148 -36.781 -72.888 -138.8 -264.2 -511.4 -983.21 -904.4
plot(xi,yi,'*');
hold on;
xo=400;
k=300;
h=40;
a=30;
alpha=75*pi/180;
xo=400;
nume=(((xi-xo)-(a*cos(alpha))).^2) + ((h-a*sin(alpha))^2);
deno=(((xi-xo)+(a*cos(alpha))).^2) + ((h+a*sin(alpha))^2); V=k*log(nume./deno);
plot(xi,V);
legend('given data','Final model')
e=0;
for i = 1:length(xi)
 e=e+((yi(i)-V(i))/yi(i))^2;
end
error=100*((e/length(xi))^0.5)
```

Command Window

```
error =

    0.0013
```


given data
Final model
200
0
-200
-400
-600
-800
-1000
0
100
200
300
400
500
600
700
800
900
1000

	Initial model	Final model
k	250	300
x0	400	400
h	30	40
a	50	30
alpha	30*pi/180	75*pi/180
% Misfit error	1.4252e+03	0.0013