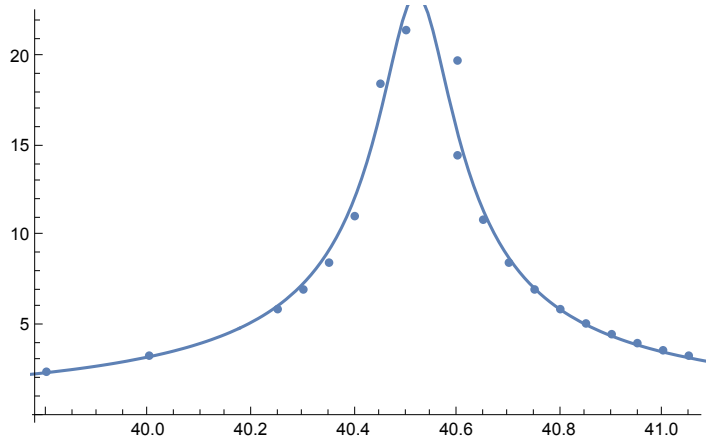
In[28]:=
```
data1 = {40.5, 40.6, 40.25, 40.4, 40.3, 40.35, 40, 39.8, 40.45,
    40.6, 40.65, 40.7, 40.75, 40.8, 40.85, 40.9, 40.95, 41, 41.05, 40.1};
data2 = Abs[{2, 3.7, 17.6, 12.4, 16.5, 15, 20.2, 21.1, 8.33 .6, 9,
     12.6, 15, 16.5, 17.6, 18.4, 19, 19.5, 19.9, 20.2} - 23.5];
datac = Partition[Riffle[data1, data2], 2]
```

Out[30]=
```
{{40.5, 21.5}, {40.6, 19.8}, {40.25, 5.9}, {40.4, 11.1},
 {40.3, 7.}, {40.35, 8.5}, {40, 3.3}, {39.8, 2.4}, {40.45, 18.502},
 {40.6, 14.5}, {40.65, 10.9}, {40.7, 8.5}, {40.75, 7.}, {40.8, 5.9},
 {40.85, 5.1}, {40.9, 4.5}, {40.95, 4.}, {41, 3.6}, {41.05, 3.3}}
```

In[98]:=
```
amp = 23.5;
freq0 = 40.52;
qq = 280;
Show[ListPlot[datac],
 Plot[((amp * freq0) / (2 * qq)) / Sqrt[((x - freq0) ^ 2 + ((freq0 / (2 * qq)) ^ 2))],
  {x, 25, 55}, PlotRange → All]]
```

Out[101]=



In[102]:=
```
fit = NonlinearModelFit[datac,
  ((amp1 * freq01) / (2 * qq1)) / Sqrt[((x - freq01) ^ 2 + ((freq01 / (2 * qq1)) ^ 2))],
  {{amp1, 5}, {qq1, 50}, {freq01, 40}}, x]
```

Out[102]=

$$\text{FittedModel}\left[\frac{1.70749}{\sqrt{0.00513083+(-\ll 18\gg+x)^2}}\right]$$

In[103]:=
```
fit[{"BestFit", "ParameterTable"}]
```

Out[103]=

$$\left\{\frac{1.70749}{\sqrt{0.00513083+(-40.5251+x)^2}},\right.$$

	Estimate	Standard Error	t-Statistic	P-Value
amp1	23.8378	1.37255	17.3675	8.32975×10^{-12}
qq1	282.879	27.0849	10.4442	1.49547×10^{-8}
freq01	40.5251	0.00480229	8438.7	1.2754×10^{-54}

$\left.\right\}$

In[113]:=
```
Show[ListPlot[datac, PlotRange → {{39.7, 41.3}, {0, 24}}],
 Plot[fit[x], {x, 39.7, 41.3}]]
```

Out[113]=