In[1]:=
```
input220exp =
  Import["/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/SI_220.0011.dat",
   {"Table"}];
input440exp = Import[
   "/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/SI_440.0051.dat",
   {"Table"}];
input660exp = Import[
   "/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/SI_660.0061.dat", {"Table"}];
```

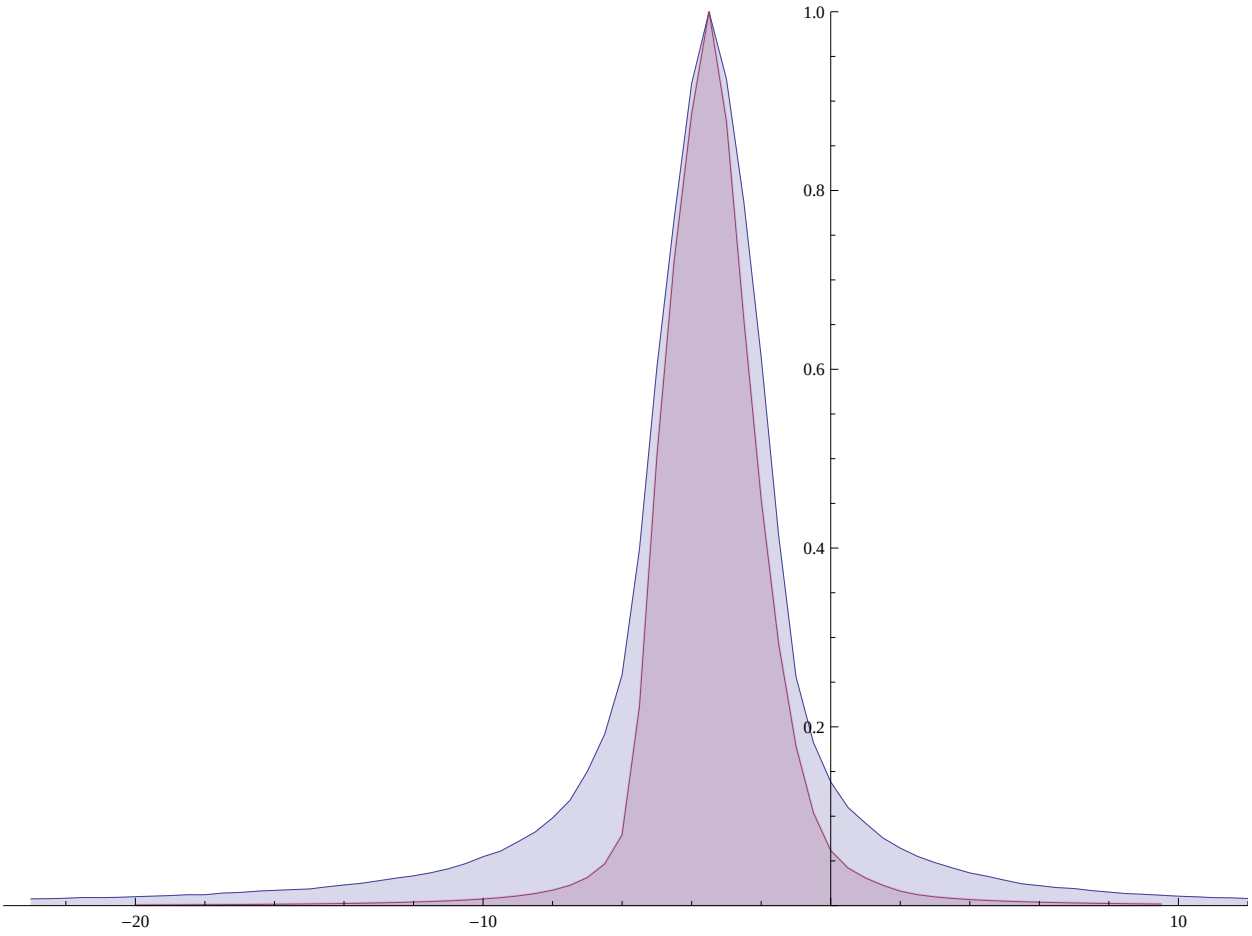
In[4]:=
```
input220theor = Import[
   "/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/220_theor.dat", {"Table"}];
input440ptheor = Import[
   "/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/440_theor+.dat", {"Table"}];
input440theor = Join[Import[
    "/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/440_theor.dat",
    {"Table"}], input440ptheor];
input660ptheor = Import[
   "/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/660_theor+.dat", {"Table"}];
input660theor = Join[ Import[
    "/Users/dns/OneDrive/Masters/SCI/FN/diby_spertion/660_theor.dat",
    {"Table"}], input660ptheor];
```

In[9]:=
```
input220exp[[All, 2]] = input220exp[[All, 2]] / Max[input220exp[[All, 2]]];
input220exp[[All, 1]] = input220exp[[All, 1]] - 3;
input440exp[[All, 2]] = input440exp[[All, 2]] / Max[input440exp[[All, 2]]];
input440exp[[All, 1]] = input440exp[[All, 1]] - 2.5;
input660exp[[All, 2]] = input660exp[[All, 2]] / Max[input660exp[[All, 2]]];
input660exp[[All, 1]] = input660exp[[All, 1]] - 5;

input220theor[[All, 2]] = input220theor[[All, 2]] / Max[input220theor[[All, 2]]];
input440theor[[All, 2]] = input440theor[[All, 2]] / Max[input440theor[[All, 2]]];
input660theor[[All, 2]] = input660theor[[All, 2]] / Max[input660theor[[All, 2]]];
```

Sample - Si[220], θ = 10.6436

In[18]:=
```
ListLinePlot[{input220exp, input220theor}, Filling → Axis,
 PlotLegends → {"Эксперимент", "Теория"}, PlotRange → {0, 1}]
```



In[211]:=
$$\text{model} = \frac{A}{\text{sigma} * \text{Sqrt}[2 * \text{Pi}]} \text{Exp}\left[-\frac{(x - \text{mu})^2}{2 * \text{sigma}^2}\right];$$

```
fit21 = FindFit[input220theor, model, {A, sigma, mu}, x];
```

In[213]:=
```
FWHM = 2.3548 * 1.25252; (*теоретическая полуширина кривой*)
```

In[214]:=
```
FWHMStepanov = 3.0870;
```

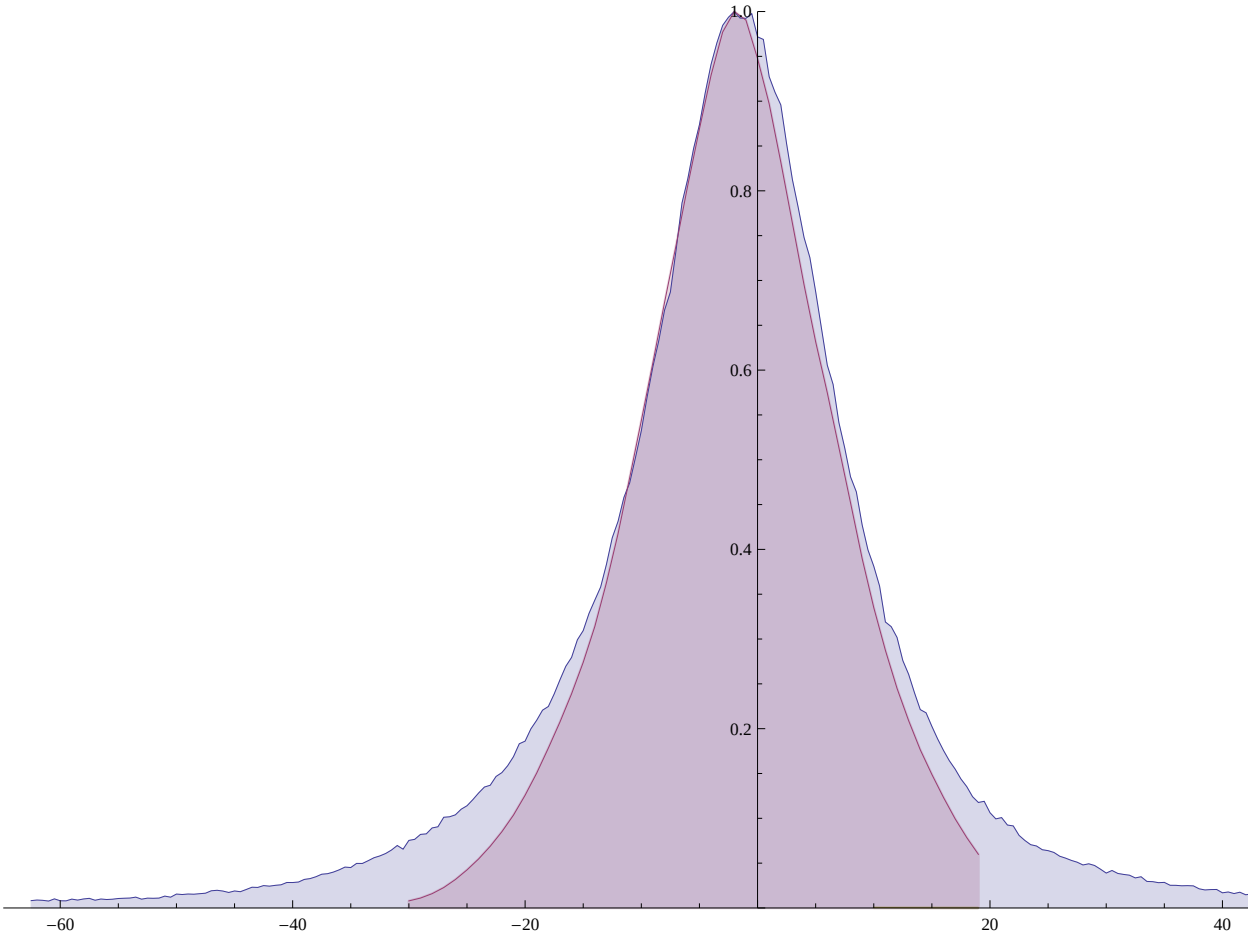
In[216]:=
$$\text{OSHIBKAabs} = \frac{2 * (\text{FWHMStepanov} - \text{FWHM})}{\text{FWHMStepanov} + \text{FWHM}} * 100$$

```
4.557853256151912`(*ошибка в процентах*)
```

Sample - Si[440], θ = 21.679

In[22]:=
```
ListLinePlot[{input440exp, input440theor, input440ptheor},
 Filling → Axis, PlotLegends → {"Эксперимент", "Теория"}, PlotRange → {0, 1}]
```

Out[22]=



Sample - Si[660], θ = 33.650

In[23]:=
```
ListLinePlot[{input660exp, input660theor}, Filling → Axis,
 PlotLegends → {"Эксперимент", "Теория"}, PlotRange → {0, 1}]
```

Out[23]=