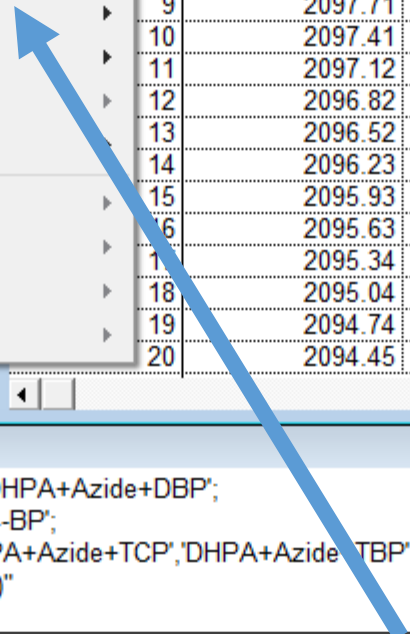


Using Mbf and Sbf scripts

- New Graph...
- New Table...
- New Layout...
- New
- Close... Ctrl+W
- Control
- Help Browser
- Help Windows
- Command Window Ctrl+J
- Procedure Window Ctrl+M**
- Graphs
- Tables
- Layouts
- Other Windows
- Graph Macros
- Table Macros
- Layout Macros
- Panel Macros

Table0:'Frequency(cm-1)',KPi,...

	'Frequency(cm-1)'	KPi	'DHPA+Azide'	'DHPA+Azide+TCP'	'DHPA+Azide+TBP'	'DHPA+Azide+DCP'	'DHPA+Azide+DBP'	'DHPA+Azide+4-BP'
0	2100.38	0.22621	0.22621	0.22621	0.22621	0.22621	0.22621	0.22621
1	2100.08	0.22615	0.22615	0.22615	0.22615	0.22615	0.22615	0.22615
2	2099.79	0.22608	0.22608	0.22608	0.22608	0.22608	0.22608	0.22608
3	2099.49	0.22602	0.22602	0.22602	0.22602	0.22602	0.22602	0.22602
4	2099.19	0.22596	0.22596	0.22596	0.22596	0.22596	0.22596	0.22596
5	2098.9	0.22589	0.22589	0.22589	0.22589	0.22589	0.22589	0.22589
6	2098.6	0.22583	0.22583	0.22583	0.22583	0.22583	0.22583	0.22583
7	2098.3	0.22577	0.22577	0.22577	0.22577	0.22577	0.22577	0.22577
8	2098.01	0.22571	0.22571	0.22571	0.22571	0.22571	0.22571	0.22571
9	2097.71	0.22565	0.22565	0.22565	0.22565	0.22565	0.22565	0.22565
10	2097.41	0.22559	0.22559	0.22559	0.22559	0.22559	0.22559	0.22559
11	2097.12	0.22553	0.22553	0.22553	0.22553	0.22553	0.22553	0.22553
12	2096.82	0.22547	0.22547	0.22547	0.22547	0.22547	0.22547	0.22547
13	2096.52	0.22542	0.22542	0.22542	0.22542	0.22542	0.22542	0.22542
14	2096.23	0.22536	0.22536	0.22536	0.22536	0.22536	0.22536	0.22536
15	2095.93	0.22531	0.22531	0.22531	0.22531	0.22531	0.22531	0.22531
16	2095.63	0.22525	0.22525	0.22525	0.22525	0.22525	0.22525	0.22525
17	2095.34	0.2252	0.2252	0.2252	0.2252	0.2252	0.2252	0.2252
18	2095.04	0.22514	0.22514	0.22514	0.22514	0.22514	0.22514	0.22514
19	2094.74	0.22509	0.22509	0.22509	0.22509	0.22509	0.22509	0.22509
20	2094.45	0.22503	0.22503	0.22503	0.22503	0.22503	0.22503	0.22503



```
FTIR_Dec_17_2015  
name 'DHPA+Azide+4-BP','DHPA+Azide+DBP';  
name wave7,'DHPA+Azide+4-BP';  
play KPi,'DHPA+Azide','DHPA+Azide+TCP','DHPA+Azide+TBP','DHPA+Azide+DCP','DHPA+Azide+DBP','DHPA+Azide+4-BP' vs 'Frequency(cm-1)'  
panel bottom "Frequency (cm-1)"  
panel left "Intensity"
```

Open the procedure window

```
Macro Mbf (root)
  String root
  Silent 1
  String avename = root
  String basename = root+"_base"
  String corname = root+"_cor"
  String bxname = root+"_bx"
  String byname = root+"_by"
  Duplicate /O $avename $basename,$corname
  $basename=x
  Make /O /N=20 $bxname,$byname
  Edit $bxname,$byname
  Display $corname
EndMacro

Macro Sbf (root)
  String root
  Silent 1
```

Copy the Macros
Mbf, Sbf and Makeby

```

Procedure
#pragma rtGlobals=1 // Use modern global access method.

macro Mbf(root)
String root

Silent 1
String avename = root
String basename = root+"_base"
String corname = root+"_cor"
String bxname = root+"_bx"
String byname = root+"_by"

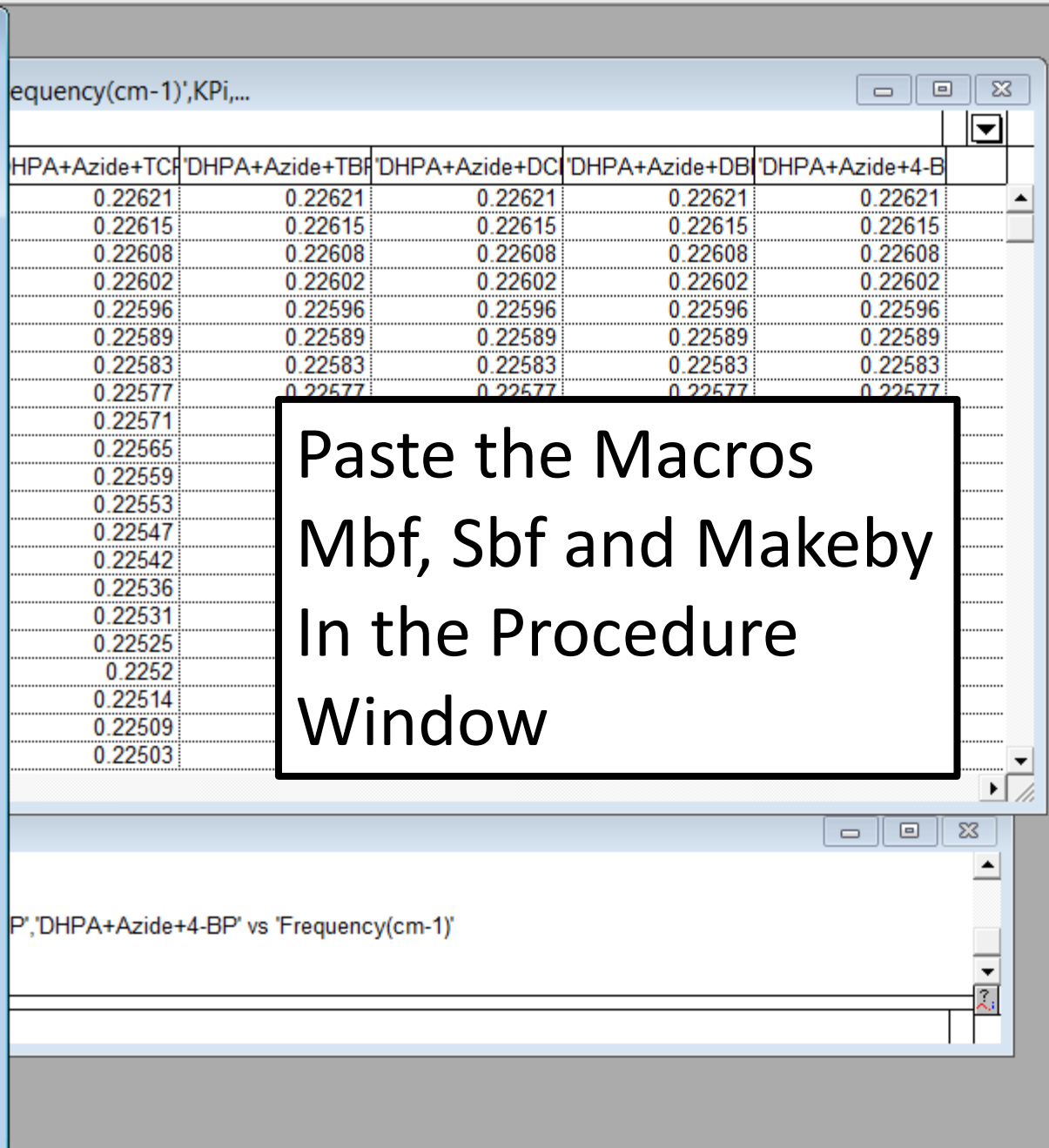
Duplicate /O $avename $basename,$corname
$basename=x
Make /O /N=20 $bxname,$byname
Edit $bxname,$byname
Display $corname

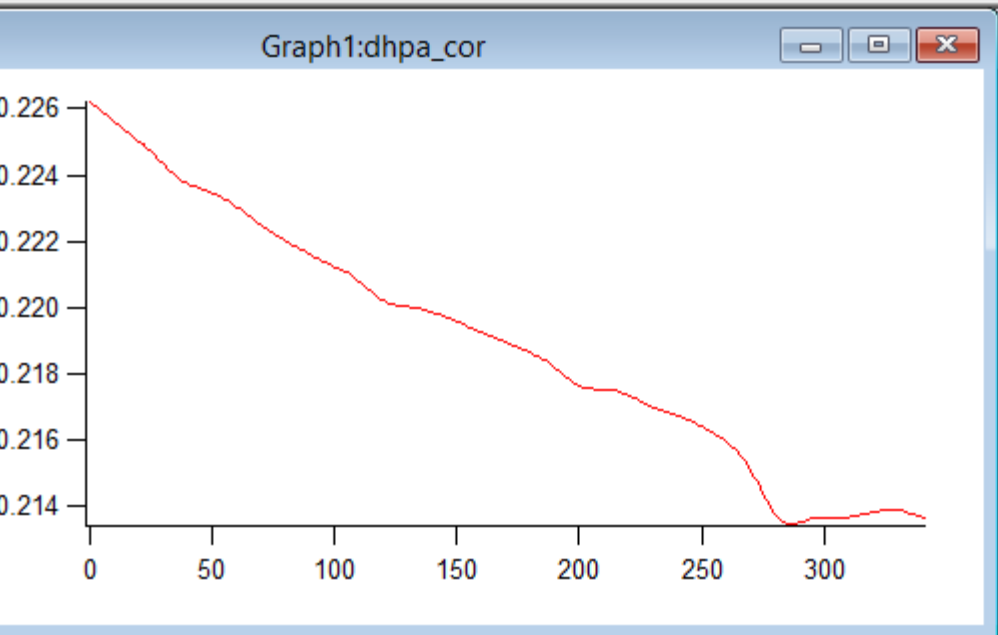
endMacro

macro Sbf(root)
String root

Silent 1
String avename = root
String basename = root+"_base"
String corname = root+"_cor"
String bxname = root+"_bx"
String byname = root+"_by"
Variable pp=0
Variable pend=numpts($bxname)

do
    $byname[pp]=MakeBy(pp,$bxname,$avename)
    pp+=1
while (pp<pend)
$corname=$avename-interp($basename,$bxname,$byname)
    
```





13	2096.32	0.22542	0.22542	0.22542
14	2096.23	0.22536	0.22536	0.22536
15	2095.93	0.22531	0.22531	0.22531
16	2095.63	0.22525	0.22525	0.22525
17	2095.34	0.2252	0.2252	0.2252
18	2095.04	0.22514	0.22514	0.22514
19	2094.74	0.22509	0.22509	0.22509
20	2094.45	0.22503	0.22503	0.22503

Insert the file name into Mbf
 For example, if the name of the file is dhpa then you will use Mbf("dhpa")
 Note the quotation marks!
 Hit return and the routine Mbf will run generating the corrected file and the point list.

```

Macro Sbf(root)
String root

Silent 1
String avename = root
String basename = root+

```

13	2096.32	0.22542	0.22542	0.22542
14	2096.23	0.22536	0.22536	0.22536
15	2095.93	0.22531	0.22531	0.22531
16	2095.63	0.22525	0.22525	0.22525
17	2095.34	0.2252	0.2252	0.2252
18	2095.04	0.22514	0.22514	0.22514
19	2094.74	0.22509	0.22509	0.22509
20	2094.45	0.22503	0.22503	0.22503

```

FTIR_Dec_17_2015

play KPi,'DHPA+Azide','DHPA+Azide+TCP','DHPA+Azide+TBP','DHPA+Azide+DCP','DHPA+Azide+DBP','DHPA+Azide+4-BP' vs 'Frequency(cm-1)'
del bottom "Frequency (cm-1)"
del left "Intensity"
name 'DHPA+Azide' dhpa
f("dhpa")

```

```

$name ($pp -pema)
$corname=$avename-interp($basename,$bxname,$byname)

```

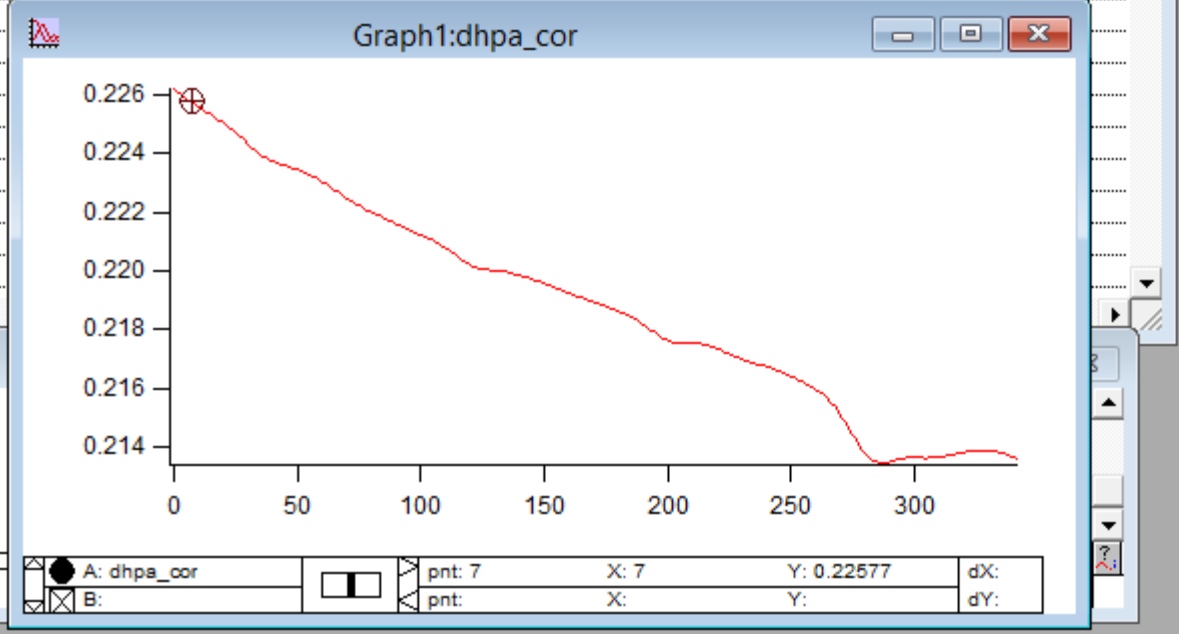
Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

Table 1 is a list of baseline points. You ONLY need to input the x values. To obtain the cursor use <ctrl> I.

Edit \$bxname,\$byname	11	2097.12	0.22553	0.22553
Display \$curname	12	2096.82	0.22547	0.22547
	13	2096.52	0.22542	0.22542
ndMacro	14	2096.23	0.22536	0.22536
acro Sbf(root)	15	2095.93	0.22531	0.22531
String root	16	2095.63	0.22525	0.22525
	17	2095.34	0.2252	0.2252
Silent 1	18	2095.04	0.22514	0.22514
String avename = root	19	2094.74	0.22509	0.22509
String basename = root+	20	2094.45	0.22503	0.22503

0.22583	0.22583	0.22583	0.22583	0.22583
0.22577	0.22577	0.22577	0.22577	0.22577
0.22571	0.22571	0.22571	0.22571	0.22571
0.22565	0.22565	0.22565	0.22565	0.22565
0.22559	0.22559	0.22559	0.22559	0.22559
0.22553	0.22553	0.22553	0.22553	0.22553



FTIR_Dec_17_2015

Label bottom "Frequency (cm-1)"
 Label left "Intensity"
 Name 'DHPA+Azide' dhpa
 f("dhpa")
 ShowInfo

Code: \$curname=\$avename-interp(\$basename,\$bxname,\$byname)

Templates Procedures

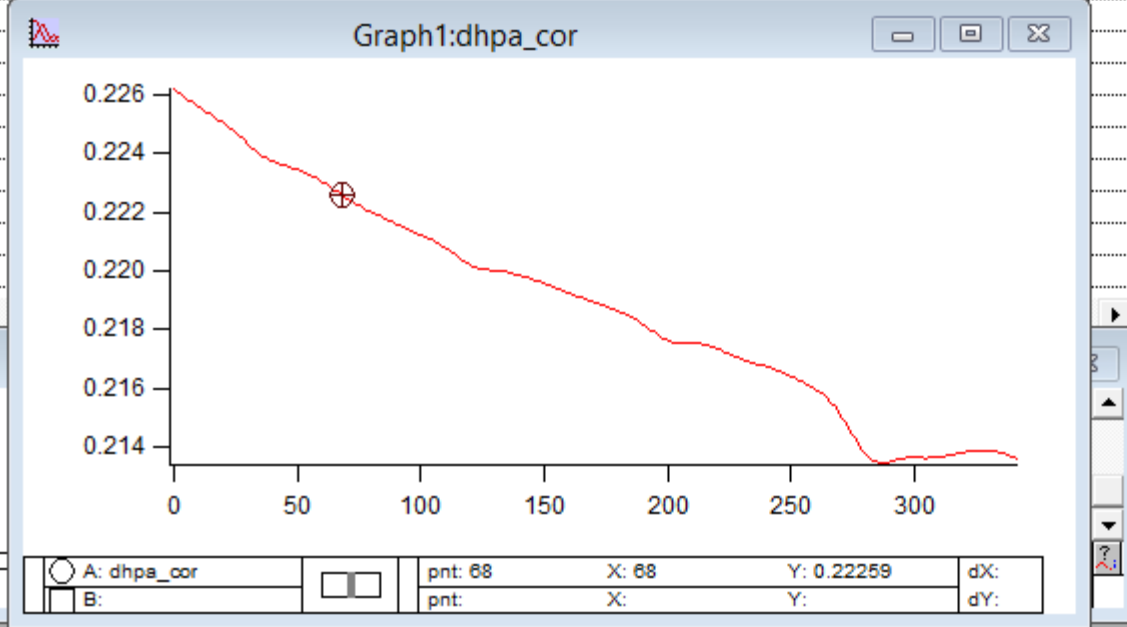
Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	9	0
1	68	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

This is subjective, but you need to assess which points should be on the baseline (i.e. not the peaks). Enter the x values into the Table.

Edit \$bxname,\$byname	11	2097.12	0.22553	0.22553
Display \$comname	12	2096.82	0.22547	0.22547
	13	2096.52	0.22542	0.22542
ndMacro	14	2096.23	0.22536	0.22536
acro Sbf(root)	15	2095.93	0.22531	0.22531
String root	16	2095.63	0.22525	0.22525
	17	2095.34	0.2252	0.2252
Silent 1	18	2095.04	0.22514	0.22514
String avename = root	19	2094.74	0.22509	0.22509
String basename = root+	20	2094.45	0.22503	0.22503

0.22565	0.22565	0.22565	0.22565	0.22565
0.22559	0.22559	0.22559	0.22559	0.22559
0.22553	0.22553	0.22553	0.22553	0.22553



FTIR_Dec_17_2015

Label bottom "Frequency (cm-1)"
 Label left "Intensity"
 Name 'DHPA+Azide' dhpa
 f("dhpa")
 ShowInfo

\$comname=\$avename-**interp**(\$basename,\$bxname,\$byname)

Templates Procedures

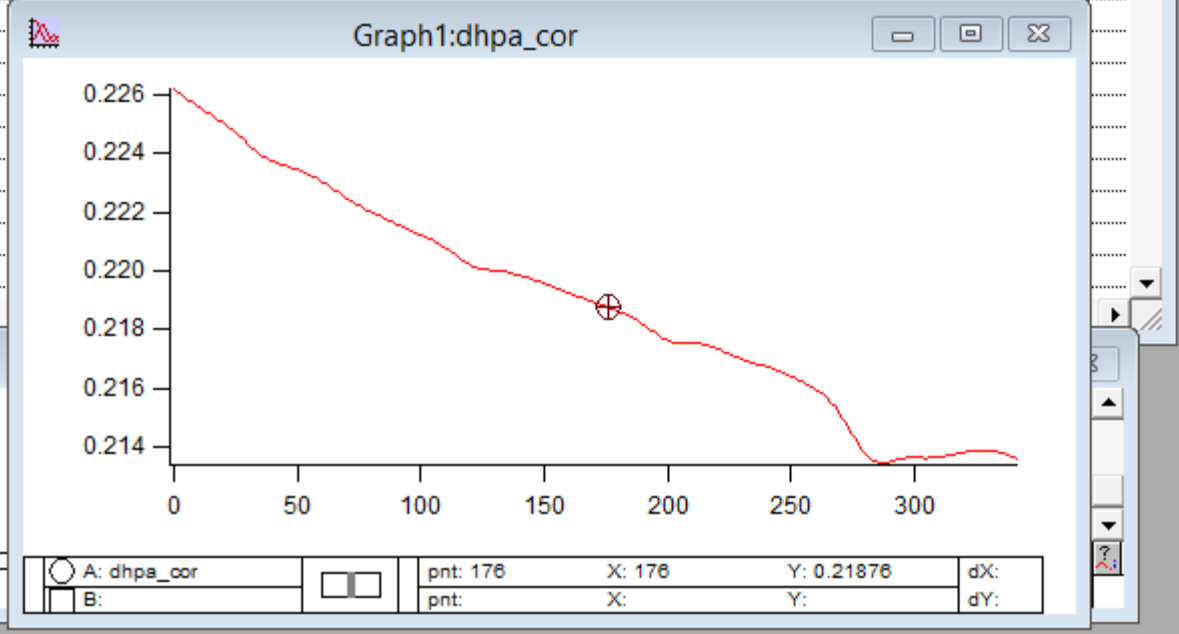
Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	9	0
1	68	0
2	145	0
3	176	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

This is subjective, but you need to assess which points should be on the baseline (i.e. not the peaks). Enter the x values into the Table.

Edit \$bxname,\$byname	11	2097.12	0.22553	0.22553
Display \$comname	12	2096.82	0.22547	0.22547
	13	2096.52	0.22542	0.22542
ndMacro	14	2096.23	0.22536	0.22536
acro Sbf(root)	15	2095.93	0.22531	0.22531
String root	16	2095.63	0.22525	0.22525
	17	2095.34	0.2252	0.2252
Silent 1	18	2095.04	0.22514	0.22514
String avename = root	19	2094.74	0.22509	0.22509
String basename = root+	20	2094.45	0.22503	0.22503

0.22565	0.22565	0.22565	0.22565	0.22565
0.22559	0.22559	0.22559	0.22559	0.22559
0.22553	0.22553	0.22553	0.22553	0.22553



FTIR_Dec_17_2015

Label bottom "Frequency (cm-1)"
 Label left "Intensity"
 Name 'DHPA+Azide' dhpa
 f("dhpa")
 ShowInfo

\$comname=\$avename-*interp*(\$basename,\$bxname,\$byname)

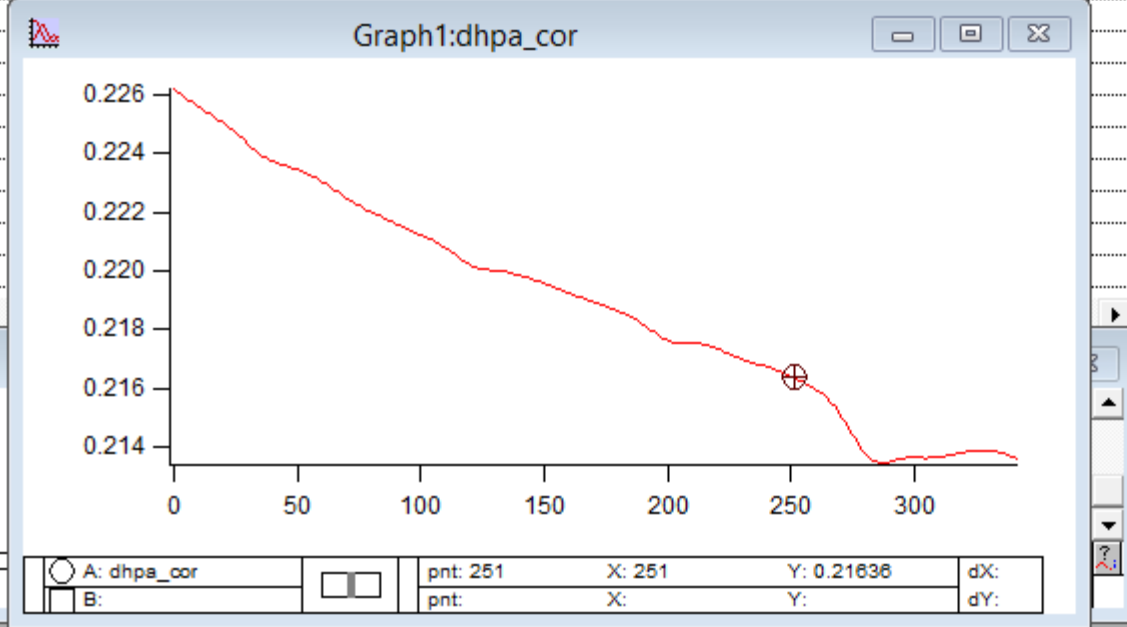
Templates Procedures

Point	dhpa_bx	dhpa_by
0	9	0
1	68	0
2	145	0
3	176	0
4	223	0
5	251	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

Continue across the entire file and enter at least 5 points that are on the baseline.

Edit \$bxname,\$byname	11	2097.12	0.22553	0.22553
Display \$cname	12	2096.82	0.22547	0.22547
	13	2096.52	0.22542	0.22542
ndMacro	14	2096.23	0.22536	0.22536
acro Sbf(root)	15	2095.93	0.22531	0.22531
String root	16	2095.63	0.22525	0.22525
	17	2095.34	0.2252	0.2252
Silent 1	18	2095.04	0.22514	0.22514
String avename = root	19	2094.74	0.22509	0.22509
String basename = root+	20	2094.45	0.22503	0.22503

0.22589	0.22589	0.22589	0.22589	0.22589
0.22583	0.22583	0.22583	0.22583	0.22583
0.22577	0.22577	0.22577	0.22577	0.22577
0.22571	0.22571	0.22571	0.22571	0.22571
0.22565	0.22565	0.22565	0.22565	0.22565
0.22559	0.22559	0.22559	0.22559	0.22559
0.22553	0.22553	0.22553	0.22553	0.22553



FTIR_Dec_17_2015

Label bottom "Frequency (cm-1)"
 Label left "Intensity"
 Name 'DHPA+Azide' dhpa
 f("dhpa")
 ShowInfo

Templates Procedures

\$cname=\$avename-interp(\$basename,\$bxname,\$byname)

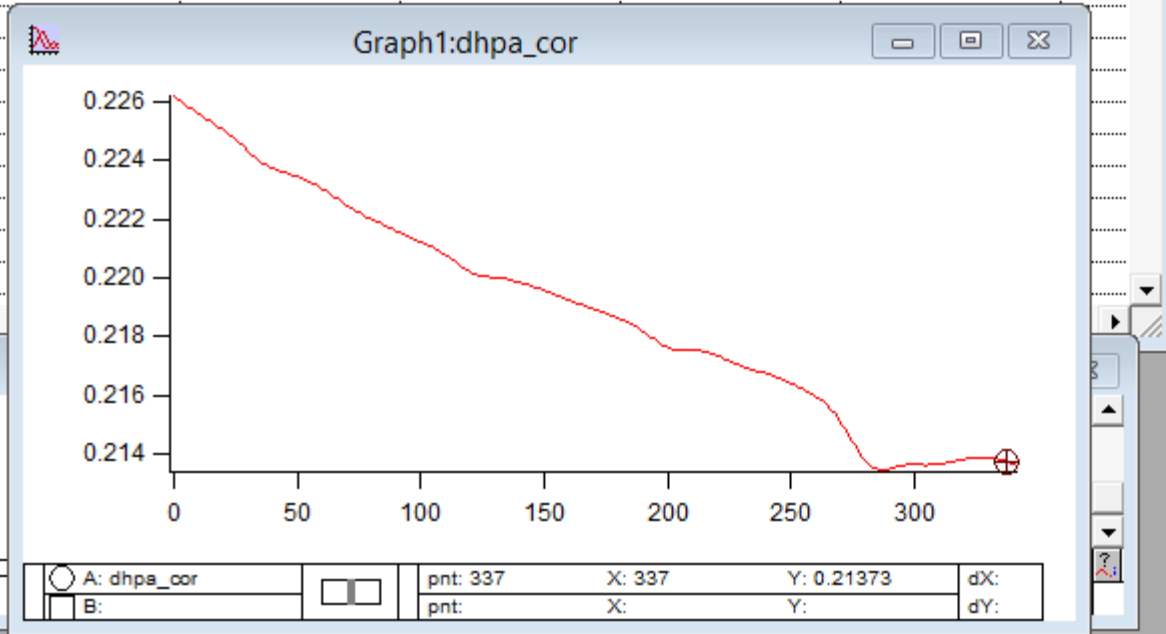
Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	9	0
1	68	0
2	145	0
3	176	0
4	223	0
5	251	0
6	337	0
7	0	0
8	0	0
9	0	0
10	0	0

m-1)',KPi,dhpa,...

zide+TCF	DHPA+Azide+TBF	DHPA+Azide+DC	DHPA+Azide+DBI	DHPA+Azide+4-B
0.22621	0.22621	0.22621	0.22621	0.22621
0.22615	0.22615	0.22615	0.22615	0.22615
0.22608	0.22608	0.22608	0.22608	0.22608
0.22602	0.22602	0.22602	0.22602	0.22602
0.22596	0.22596	0.22596	0.22596	0.22596
0.22589	0.22589	0.22589	0.22589	0.22589
0.22583	0.22583	0.22583	0.22583	0.22583
0.22577	0.22577	0.22577	0.22577	0.22577
0.22571	0.22571	0.22571	0.22571	0.22571
0.22565	0.22565	0.22565	0.22565	0.22565
0.22559	0.22559	0.22559	0.22559	0.22559
0.22553	0.22553	0.22553	0.22553	0.22553

Edit \$bxname,\$byname	11	2097.12	0.22553	0.22553
Display \$cname	12	2096.82	0.22547	0.22547
	13	2096.52	0.22542	0.22542
ndMacro	14	2096.23	0.22536	0.22536
acro Sbf(root)	15	2095.93	0.22531	0.22531
String root	16	2095.63	0.22525	0.22525
	17	2095.34	0.2252	0.2252
Silent 1	18	2095.04	0.22514	0.22514
String avename = root	19	2094.74	0.22509	0.22509
String basename = root+	20	2094.45	0.22503	0.22503



FTIR_Dec_17_2015

Label bottom "Frequency (cm-1)"
 Label left "Intensity"
 Name 'DHPA+Azide' dhpa
 f("dhpa")
 ShowInfo

\$cname=\$avename-interp(\$basename,\$bxname,\$byname)

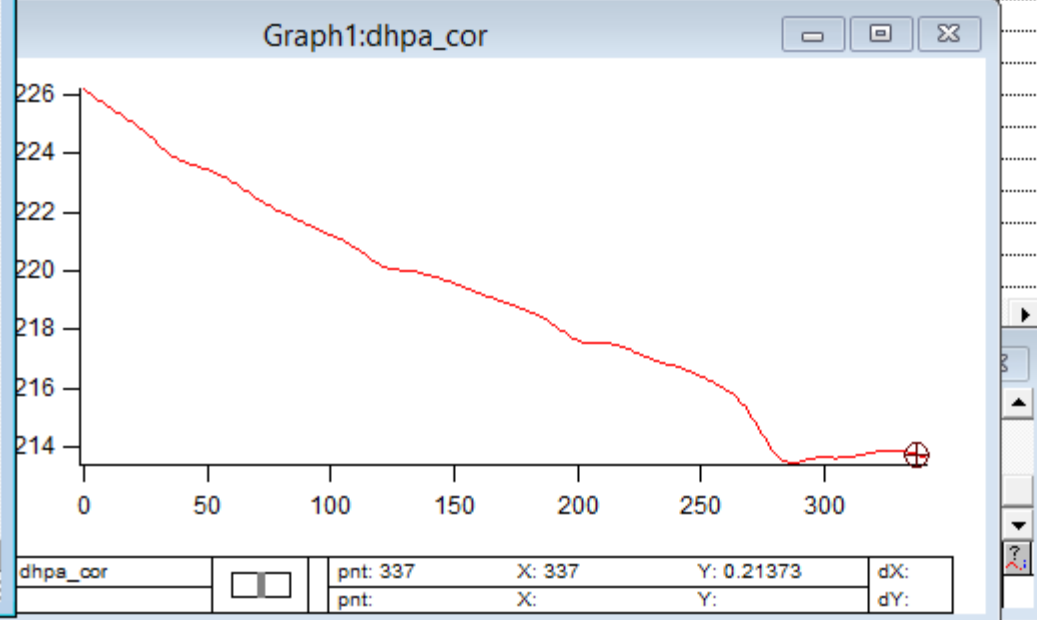
Templates Procedures

Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	9	0
1	68	0
2	145	0
3	176	0
4	223	0
5	251	0
6	337	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20		

Delete the unused points. Select those points and type <ctrl> x.

22608	0.22608	0.22608	0.22608	0.22608
22602	0.22602	0.22602	0.22602	0.22602
22596	0.22596	0.22596	0.22596	0.22596
22589	0.22589	0.22589	0.22589	0.22589
22583	0.22583	0.22583	0.22583	0.22583
22577	0.22577	0.22577	0.22577	0.22577
22571	0.22571	0.22571	0.22571	0.22571
22565	0.22565	0.22565	0.22565	0.22565
22559	0.22559	0.22559	0.22559	0.22559
22553	0.22553	0.22553	0.22553	0.22553



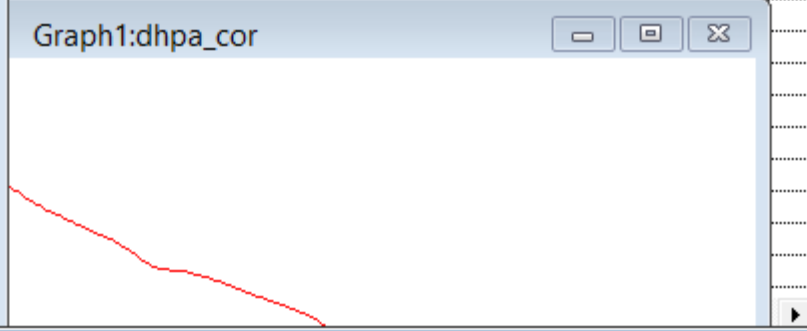
```
$curname=$avename-interp($basename,$bxname,$byname)
```

Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	9	0
1	68	0
2	145	0
3	176	0
4	223	0
5	251	0
6	337	0
7	339	0
8		

Copy the Mbf command and change the M to S so it reads Sbf("dhpa")

0.22583	0.22583	0.22583	0.22583
0.22577	0.22577	0.22577	0.22577
0.22571	0.22571	0.22571	0.22571
0.22565	0.22565	0.22565	0.22565
0.22559	0.22559	0.22559	0.22559
0.22553	0.22553	0.22553	0.22553

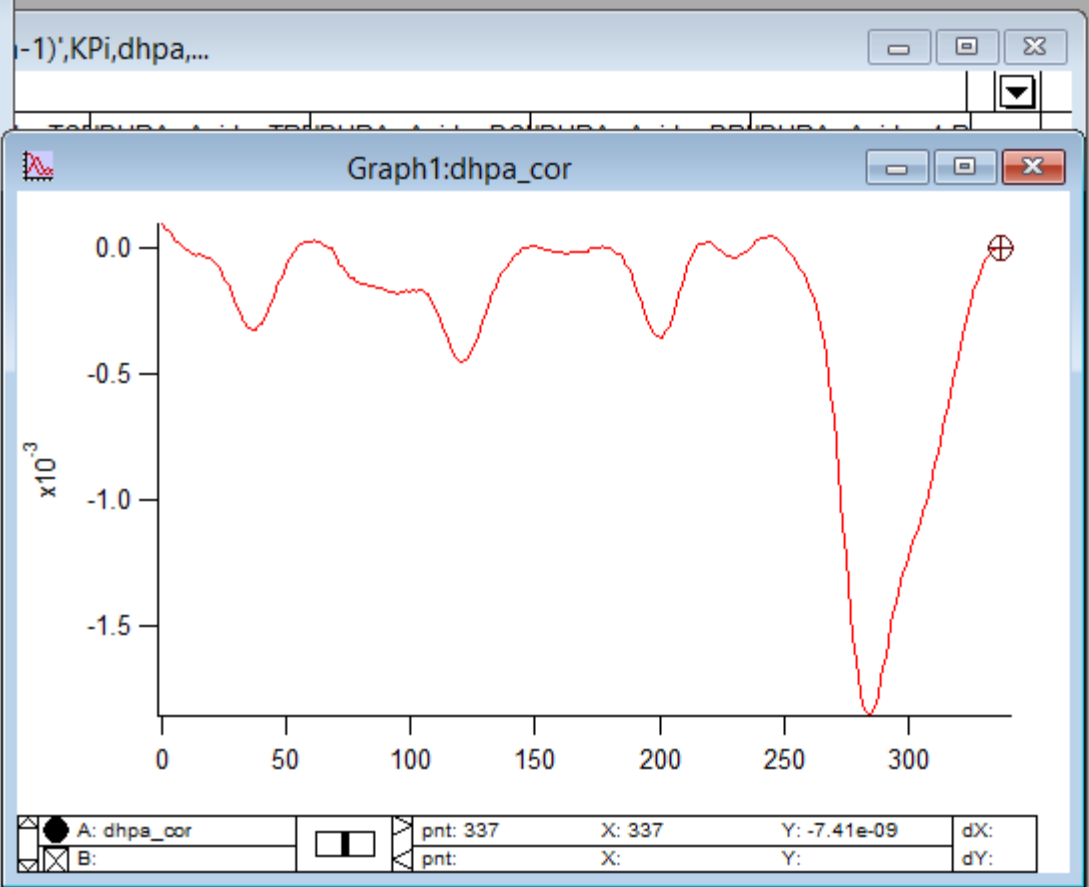


FTIR_Dec_17_2015

Label bottom "Frequency (cm-1)"
 Label left "Intensity"
 Name 'DHPA+Azide' dhpa
 f("dhpa")
 ShowInfo
 'dhpa')

Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	9	0.22565
1	68	0.22259
2	145	0.21972
3	176	0.21876
4	223	0.21723
5	251	0.21636
6	337	0.21373
7	339	0.21367
8		



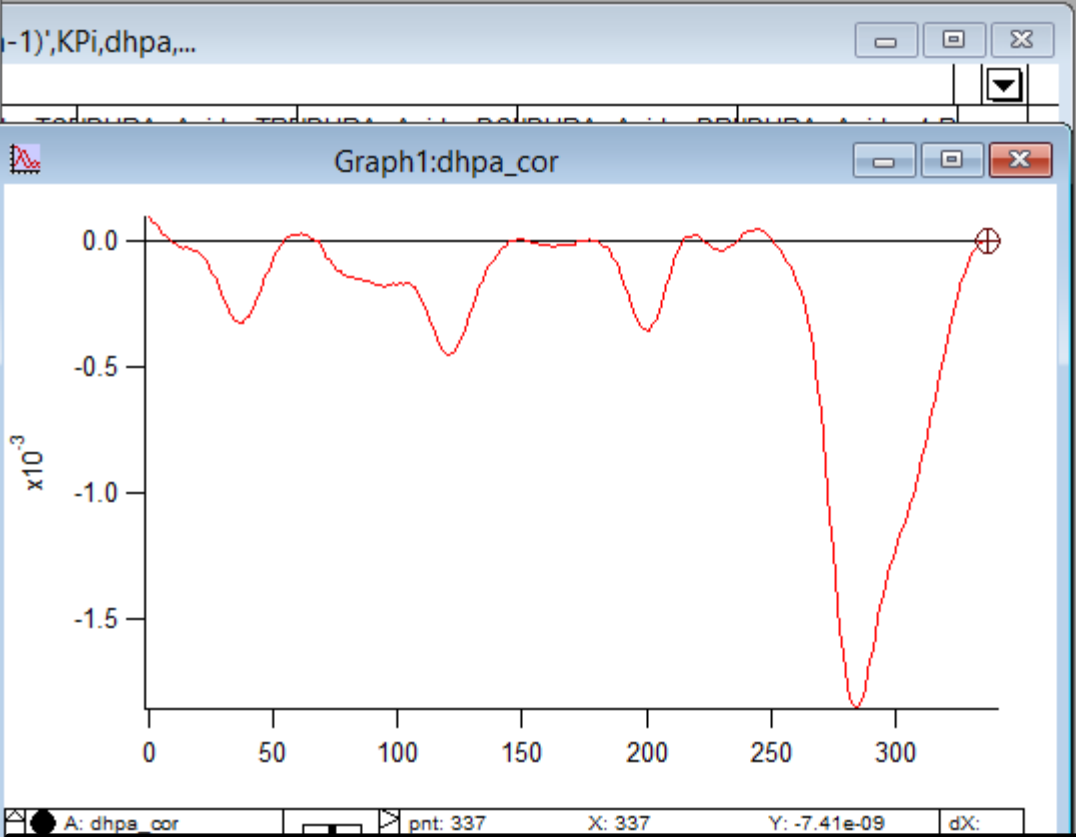
- Label left "Intensity"
- rename 'DHPA+Azide' dhpa
- mbf("dhpa")
- ShowInfo
- sbf("dhpa")

FTIR_Dec_17_2015

Type return to execute Sbf.
 Mbf = make baseline file
 Sbf = subtract baseline file

Table1:dhpa_bx,dhpa_by

Point	dhpa_bx	dhpa_by
0	9	0.22565
1	68	0.22259
2	145	0.21972
3	176	0.21876
4	223	0.21723
5	251	0.21636
6	337	0.21373
7	339	0.21367
8		



When plotted using a zero line one can see that the selected points in the x values of Table 1 are along the baseline.

```
•rename 'DHPA+Azide' dhpa  
•mbf("dhpa")  
•ShowInfo  
•sbf("dhpa")  
•ModifyGraph zero(left)=1
```