

```
Needs["ErrorBarPlots`"];
Needs["CustomTicks`"];
Needs["PolygonPlotMarkers`"];
```

```
dataKatie = ImportString["pressure /Torr\tscaled mean\tscaled error
```

```
CH B-X 20/3/500\t\t
75\t0.801724119\t0.085133896
100\t1.572474804\t0.131591481
125\t2.22405797\t0.107892848
150\t3.253795826\t0.175248008
175\t4.223789983\t0.181616029
200\t5.960780878\t0.289892878
```

```
CN B-X 20/3/500\t\t
75\t0.082741504\t0.009733122
100\t0.196646073\t0.022588766
125\t0.336344651\t0.038046338
150\t0.517272211\t0.0584436
175\t0.772188689\t0.087001096
200\t1.055345763\t0.12457641
", "TSV"];
```

```
TableForm[dataKatie, TableHeadings → {Range@Length[dataKatie], None}]
```

	pressure /Torr	scaled mean	scaled error
1			
2			
3	CH B-X 20/3/500		
4	75	0.801724	0.0851339
5	100	1.57247	0.131591
6	125	2.22406	0.107893
7	150	3.2538	0.175248
8	175	4.22379	0.181616
9	200	5.96078	0.289893
10			
11	CN B-X 20/3/500		
12	75	0.0827415	0.00973312
13	100	0.196646	0.0225888
14	125	0.336345	0.0380463
15	150	0.517272	0.0584436
16	175	0.772189	0.0870011
17	200	1.05535	0.124576

```
CHbxKatie = dataKatie[[4 ;; 9]] /. {p_, y_, err_} ⇒ {{p, y}, ErrorBar[err]}
```

```
{{{75, 0.801724}, ErrorBar[0.0851339]}, {{100, 1.57247}, ErrorBar[0.131591]},
 {{125, 2.22406}, ErrorBar[0.107893]}, {{150, 3.2538}, ErrorBar[0.175248]},
 {{175, 4.22379}, ErrorBar[0.181616]}, {{200, 5.96078}, ErrorBar[0.289893]}}
```

```
CNcorrection = 1.056471319;
```

```
CNbxKatie = dataKatie[[12 ;; 17]] /.
```

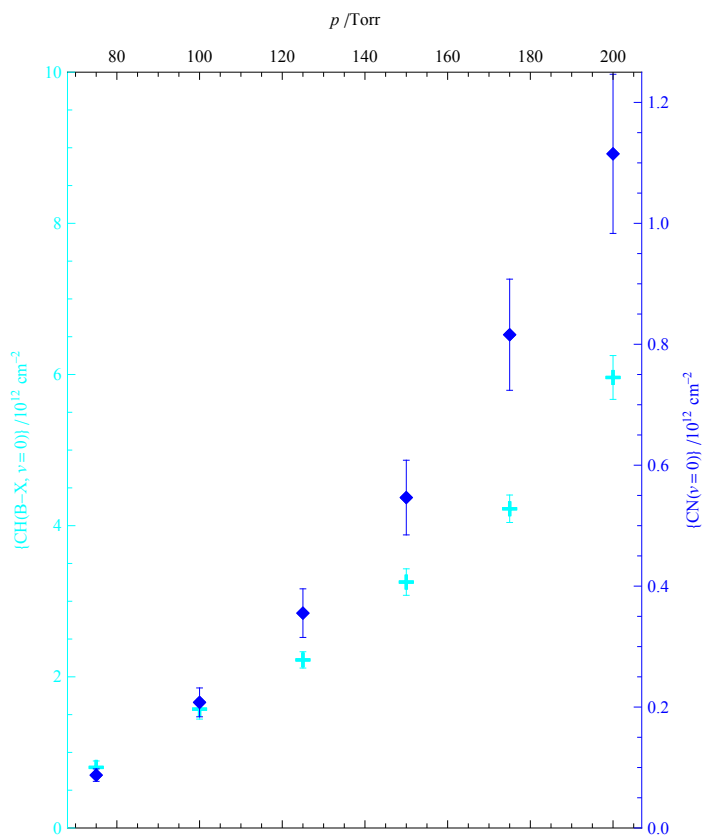
```
{p_, y_, err_} ⇒ {{p, CNcorrection 8 y}, ErrorBar[CNcorrection 8 err]}
```

```
{{{75, 0.699312}, ErrorBar[0.0822621]}, {{100, 1.66201}, ErrorBar[0.190915]},
 {{125, 2.84271}, ErrorBar[0.321559]}, {{150, 4.37187}, ErrorBar[0.493952]},
 {{175, 6.52636}, ErrorBar[0.735313]}, {{200, 8.91954}, ErrorBar[1.05289]}}
```

```

plotKatie = ErrorListPlot[{CHbxKatie, CNbxKatie}, Joined → False,
  PlotRange → {All, {0, 10}},
  PlotRangePadding → {{Scaled[0.05], Scaled[0.05]}, {None, None}},
  PlotStyle → {Cyan, Blue},
  PlotMarkers → {
    Graphics[{FaceForm[Cyan], EdgeForm@Directive[Cyan, AbsoluteThickness[0.5]],
      PolygonMarker["Cross", Scaled[0.0225]]}],
    Graphics[{FaceForm[Blue], EdgeForm@Directive[Blue, AbsoluteThickness[0.5]],
      PolygonMarker["DiagonalSquare", Scaled[0.025]]}]
  },
  Frame → True,
  FrameStyle → {
    {
      Directive[AbsoluteThickness[0.5], Cyan],
      Directive[AbsoluteThickness[0.5], Blue]
    }, {
      Directive[AbsoluteThickness[0.5], Black],
      Directive[AbsoluteThickness[0.5], Black]
    }
  },
  FrameTicks → {
    {
      Automatic,
      (* CN scaled by 8 *)
      LinTicks[0, 1.4, TickPostTransformation → (8 # &),
        MajorTickLength → 0.014`, MinorTickLength → 0.008`]
    }, {
      Automatic,
      All
    }
  },
  FrameLabel → {
    {
      Style["{CH(B-X,  $\nu=0$ )} /1012 cm-2", Cyan],
      Style["{CN( $\nu=0$ )} /1012 cm-2", Blue]
    },
    {None, "p /Torr"}
  },
  ImagePadding → {{Automatic, Automatic}, {6, Automatic}}, AspectRatio → Full
]

```



```
CHcalcKatie = {{75, 1.455}, {150, 3.62}} /. {p : Except[_List], y : Except[_List]} => {p, y}
```

```
{{75, 1.455}, {150, 3.62}}
```

```
CNcalcKatie =
```

```
  {{75, 0.1245}, {150, 0.591}} /. {p : Except[_List], y : Except[_List]} => {p, 8 y}
```

```
  {{75, 0.996}, {150, 4.728}}
```

```
plotKatiecalc = ListPlot[{CHcalcKatie, CNcalcKatie}, Joined -> False,
```

```
  PlotRange -> Full,
```

```
  PlotMarkers -> {
```

```
    Graphics[{{FaceForm[White], EdgeForm@Directive[Cyan, AbsoluteThickness[0.75]},  
      PolygonMarker["Cross", Scaled[0.03]]}],
```

```
    Graphics[{{FaceForm[White], EdgeForm@Directive[Blue, AbsoluteThickness[1.0]},  
      PolygonMarker["DiagonalSquare", Scaled[0.03]]}]
```

```
  },
```

```
  Axes -> False
```

```
dataMark = ImportString["pressure /Torr\tscaled mean\tscaled error
```

```
CH A-X (20+10×99%) / (10×1%) / 470\t\t
```

```
120\t3.853201586\t0.085258745
```

```
140\t4.700631963\t0.289471705
```

```
160\t5.66457688\t0.147552299
```

```
180\t6.323804199\t0.164924295
```

```
200\t7.322413349\t0.325193648
```

```
220\t7.623272716\t0.370365024
```

```
240\t7.922786785\t0.314922663
```

```
260\t8.248297224\t0.20385278
```

```
280\t8.496339792\t0.369581065
```

```
300\t7.842123794\t0.271544282
```

```
CN B-X (20+10×99%) / (10×1%) / 470\t\t
```

```
120\t0.334573073\t0.068483823
```

```
140\t0.54806099\t0.112935927
```

```
160\t0.753888434\t0.273015472
```

```
180\t0.774661752\t0.066471079
```

```
200\t1.224548116\t0.137489707
```

```
220\t1.911543506\t0.117699092
```

```
240\t3.435092988\t0.576708888
```

```
260\t3.862274499\t0.540434528
```

```
280\t5.186150297\t0.182571379
```

```
300\t7.45245199\t1.314536083
```

```
", "TSV"];
```

```
TableForm[dataMark, TableHeadings → {Range@Length[dataMark], None}]
```

1	pressure /Torr	scaled mean	scaled error
2			
3	CH A-X (20+10×99%) / (10×1%) / 470		
4	120	3.8532	0.0852587
5	140	4.70063	0.289472
6	160	5.66458	0.147552
7	180	6.3238	0.164924
8	200	7.32241	0.325194
9	220	7.62327	0.370365
10	240	7.92279	0.314923
11	260	8.2483	0.203853
12	280	8.49634	0.369581
13	300	7.84212	0.271544
14			
15	CN B-X (20+10×99%) / (10×1%) / 470		
16	120	0.334573	0.0684838
17	140	0.548061	0.112936
18	160	0.753888	0.273015
19	180	0.774662	0.0664711
20	200	1.22455	0.13749
21	220	1.91154	0.117699
22	240	3.43509	0.576709
23	260	3.86227	0.540435
24	280	5.18615	0.182571
25	300	7.45245	1.31454

```

CHbxMark = dataMark[[4 ;; 13]] /. {p_, y_, err_} => {{p, y}, ErrorBar[err]}
{{{120, 3.8532}, ErrorBar[0.0852587]}, {{140, 4.70063}, ErrorBar[0.289472]},
 {{160, 5.66458}, ErrorBar[0.147552]}, {{180, 6.3238}, ErrorBar[0.164924]},
 {{200, 7.32241}, ErrorBar[0.325194]}, {{220, 7.62327}, ErrorBar[0.370365]},
 {{240, 7.92279}, ErrorBar[0.314923]}, {{260, 8.2483}, ErrorBar[0.203853]},
 {{280, 8.49634}, ErrorBar[0.369581]}, {{300, 7.84212}, ErrorBar[0.271544]}}

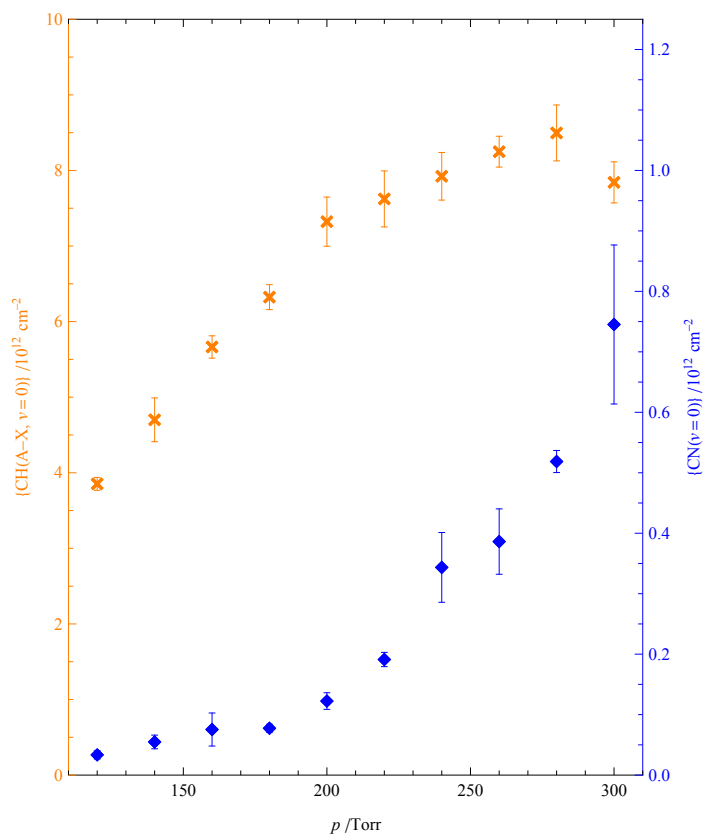
(* /10^11 in the Excel sheet; we present them here /10^12.
Therefore the scaling by 8 becomes a scaling by 0.8 on the data. *)
CNbxMark = dataMark[[16 ;; 25]] /. {p_, y_, err_} => {{p, 0.8 y}, ErrorBar[0.8 err]}
{{{120, 0.267658}, ErrorBar[0.0547871]}, {{140, 0.438449}, ErrorBar[0.0903487]},
 {{160, 0.603111}, ErrorBar[0.218412]}, {{180, 0.619729}, ErrorBar[0.0531769]},
 {{200, 0.979638}, ErrorBar[0.109992]}, {{220, 1.52923}, ErrorBar[0.0941593]},
 {{240, 2.74807}, ErrorBar[0.461367]}, {{260, 3.08982}, ErrorBar[0.432348]},
 {{280, 4.14892}, ErrorBar[0.146057]}, {{300, 5.96196}, ErrorBar[1.05163]}}

```

```

plotMark = ErrorListPlot[{CHbxMark, CNbxMark}, Joined → False, Axes → False,
  PlotRange → {All, {0, 10}},
  PlotRangePadding → {{Scaled[0.05], Scaled[0.05]}, {None, None}},
  PlotStyle → {Orange, Blue},
  PlotMarkers → {
    Graphics[{FaceForm[Orange], EdgeForm@Directive[Orange, AbsoluteThickness[0.5]],
      PolygonMarker["DiagonalCross", Scaled[0.0225]]}],
    Graphics[{FaceForm[Blue], EdgeForm@Directive[Blue, AbsoluteThickness[0.5]],
      PolygonMarker["DiagonalSquare", Scaled[0.025]]}]
  },
  Frame → True,
  FrameStyle → {
    {
      Directive[AbsoluteThickness[0.5], Orange],
      Directive[AbsoluteThickness[0.5], Blue]
    }, {
      Directive[AbsoluteThickness[0.5], Black],
      Directive[AbsoluteThickness[0.5], Black]
    }
  },
  FrameTicks → {
    {
      Automatic,
      (* CN scaled by 8 *)
      LinTicks[0, 1.4, TickPostTransformation → (8 # &),
        MajorTickLength → 0.014`, MinorTickLength → 0.008`]
    }, {
      Automatic,
      Automatic
    }
  },
  FrameLabel → {
    {
      Style["{CH(A-X, v=0)} /1012 cm-2", Orange],
      Style["{CN(v=0)} /1012 cm-2", Blue]
    },
    {"p /Torr", None}
  },
  AspectRatio → Full,
  ImagePadding → {{Automatic, Automatic}, {Automatic, 6}}
]

```



```

CHcalcMark = {{75, Indeterminate}, {150, Indeterminate}} /.
  {p : Except[_List], y : Except[_List]} => {p, y}
{{75, Indeterminate}, {150, Indeterminate}}

CNcalcMark = {{75, Indeterminate}, {150, Indeterminate}} /.
  {p : Except[_List], y : Except[_List]} => {p, 5 y}
{{75, Indeterminate}, {150, Indeterminate}}

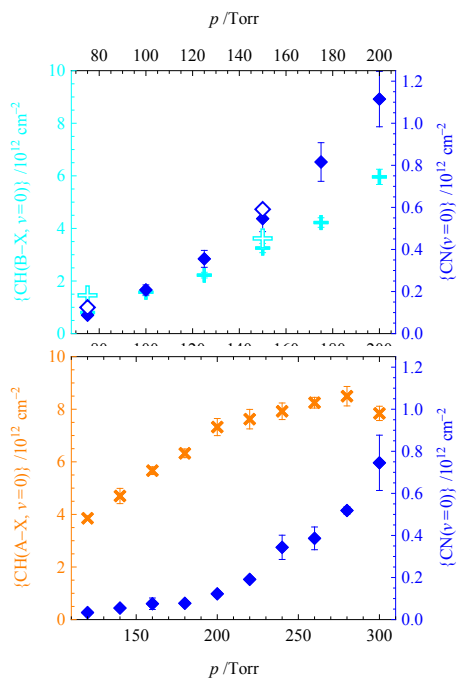
plotMarkcalc = ListPlot[{CHcalcMark, CNcalcMark}, Joined -> False,
  PlotRange -> Full,
  PlotMarkers -> {
    Graphics[{FaceForm[None], EdgeForm@Directive[Orange, AbsoluteThickness[0.5]],
      PolygonMarker["DiagonalCross", Scaled[0.0225]]}],
    Graphics[{FaceForm[None], EdgeForm@Directive[Blue, AbsoluteThickness[0.5]],
      PolygonMarker["DiagonalSquare", Scaled[0.025]]}]
  },
  Axes -> False
];

```

```

plot =
GraphicsGrid[{{Show[{plotKatie, plotKatiecalc]}], {Show[{plotMark, plotMarkcalc]}]},
  Spacings → 0, ImagePadding → {{None, None}, {Automatic, Automatic}},
  PlotRangePadding → None,
  AspectRatio → Full, ImageSize → {8.25 * 72 / 2.54, 12.375 * 72 / 2.54},
  BaseStyle → {PrivateFontOptions → {"OperatorSubstitution" → False}}
]

```



(* MUST export it in EPS format. No other formats work correctly.

Alternative is to save a PDF and then open

it in Drawplus rather than attempting to paste. *)

```
SetDirectory@NotebookDirectory[];
```

```
Export["plotmma.pdf", plot, "PDF"]
```

```
plotmma.pdf
```