Supporting Information

Isolation and Identification of Bioactive Compounds from *Tinospora cordifolia* Stem Extracts as Antibacterial Materials in Seawater Environments

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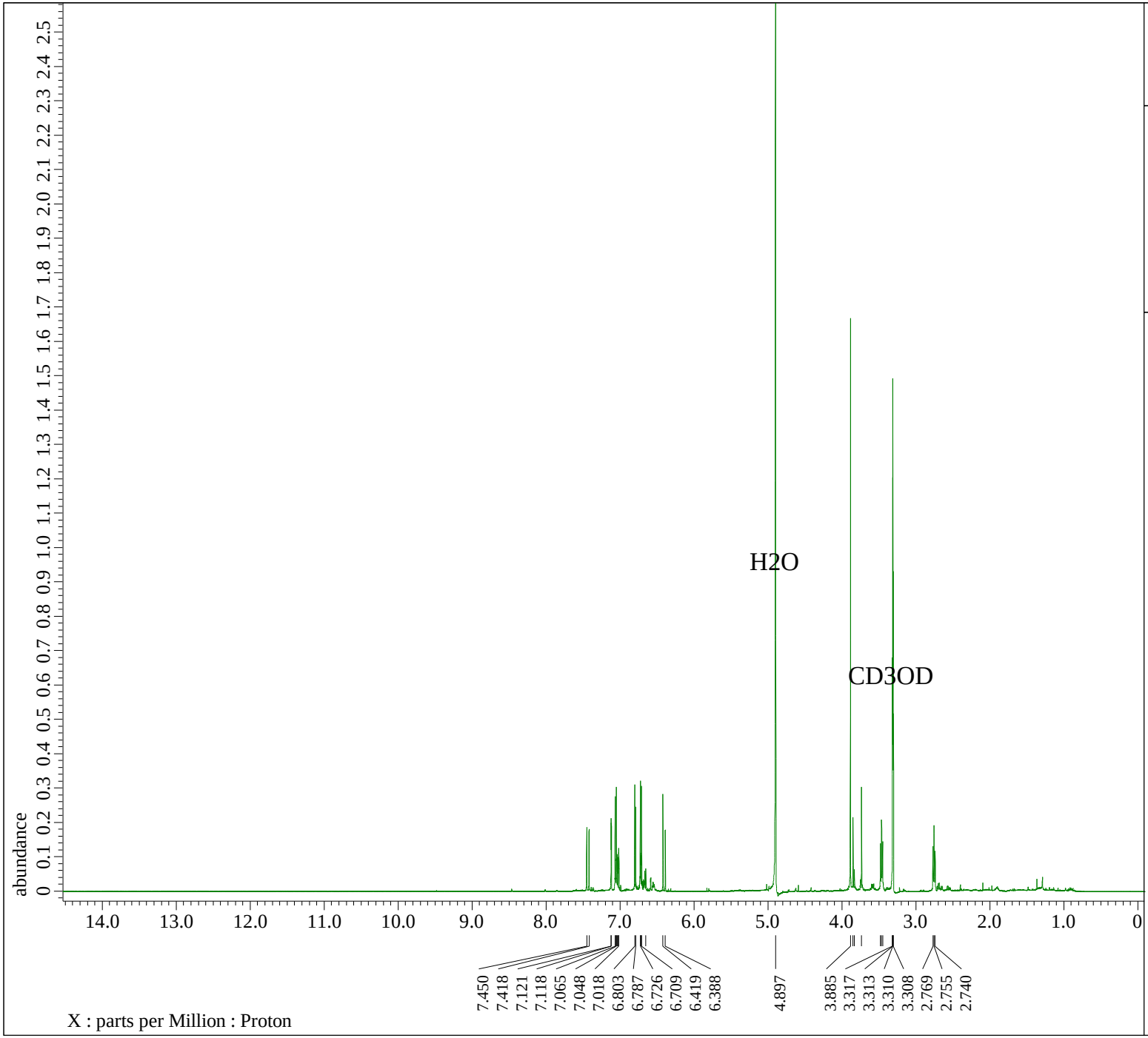
Fig. SI-1. 1H NMR Spectra

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Total_Scans	= 32
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Temp_Get	= 19.8[dC]
X_90_Width	= 8[us]
X_Acq_Time	= 1.74587904[s]
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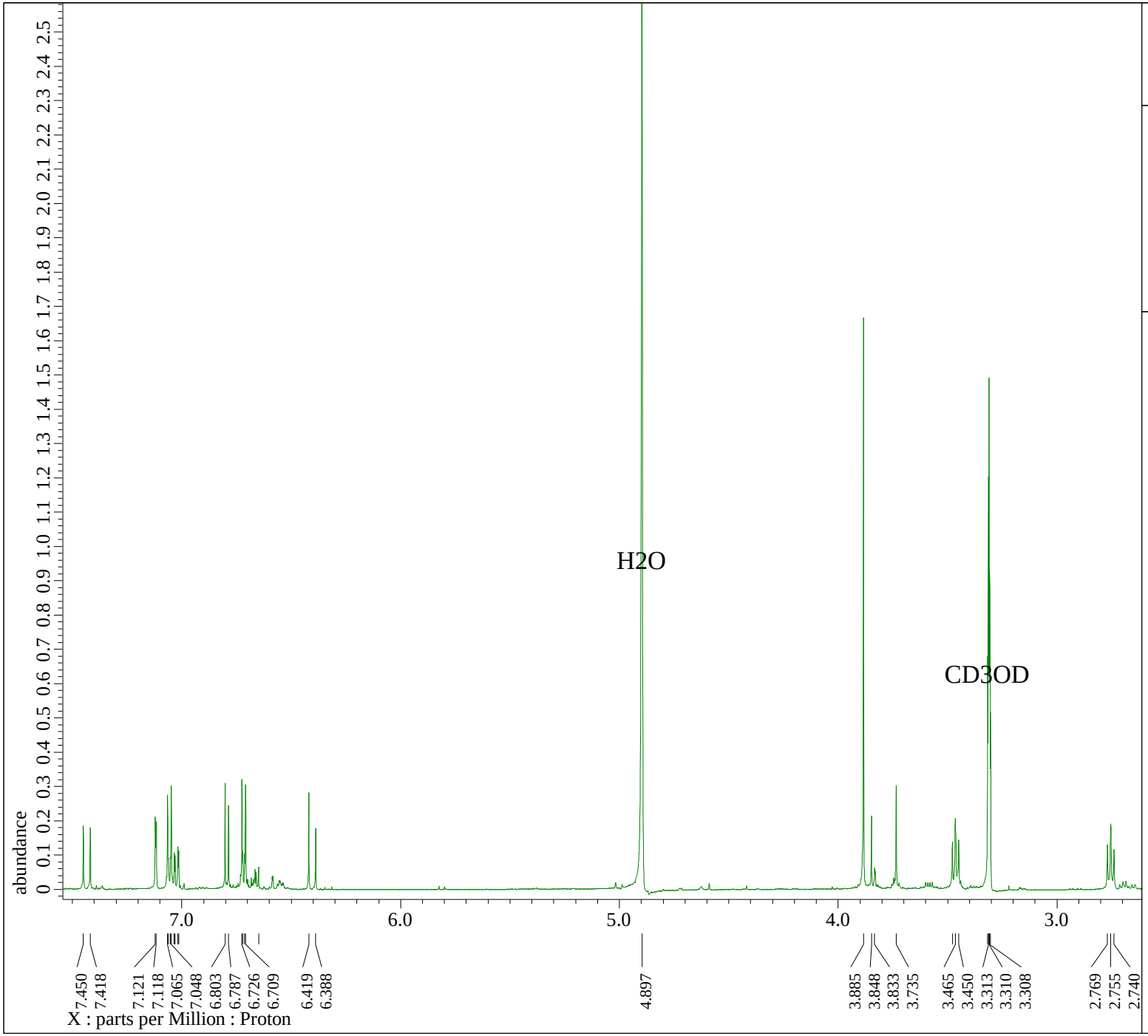

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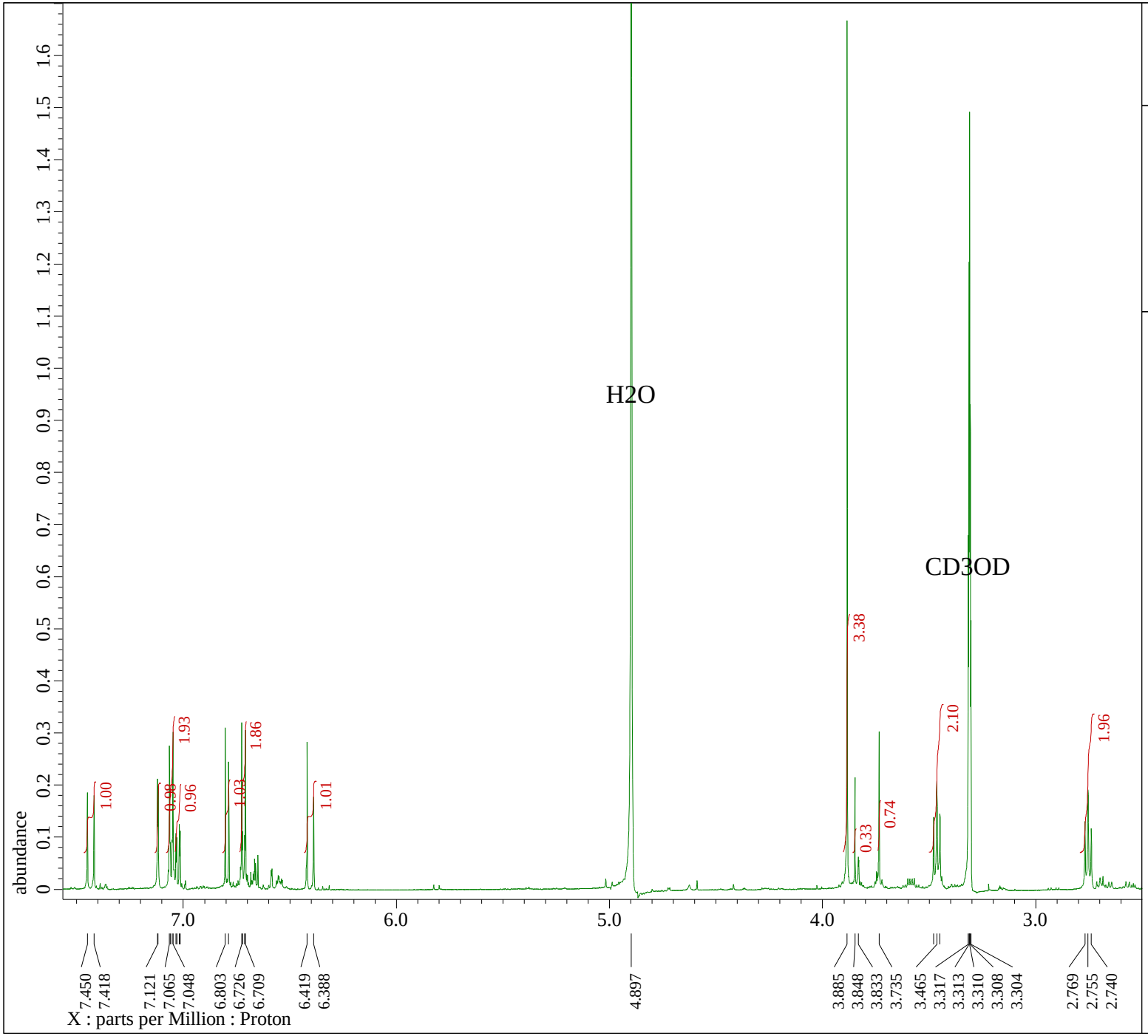


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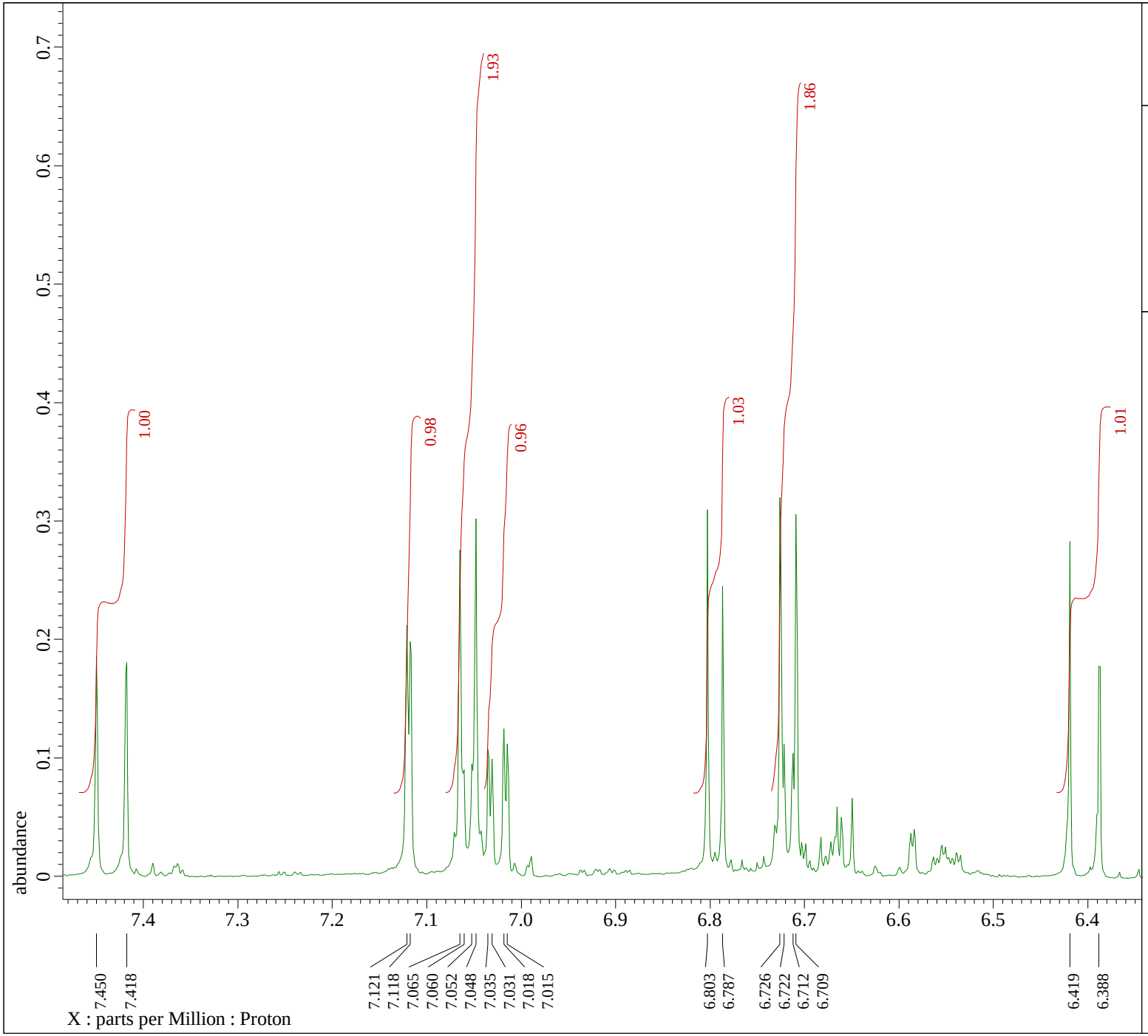

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Tri_Domain	= Proton
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Tri_Offset	= 5.0[ppm]
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Scans	= 32
Total_Scans	= 32
Relaxation_Delay	= 5[s]
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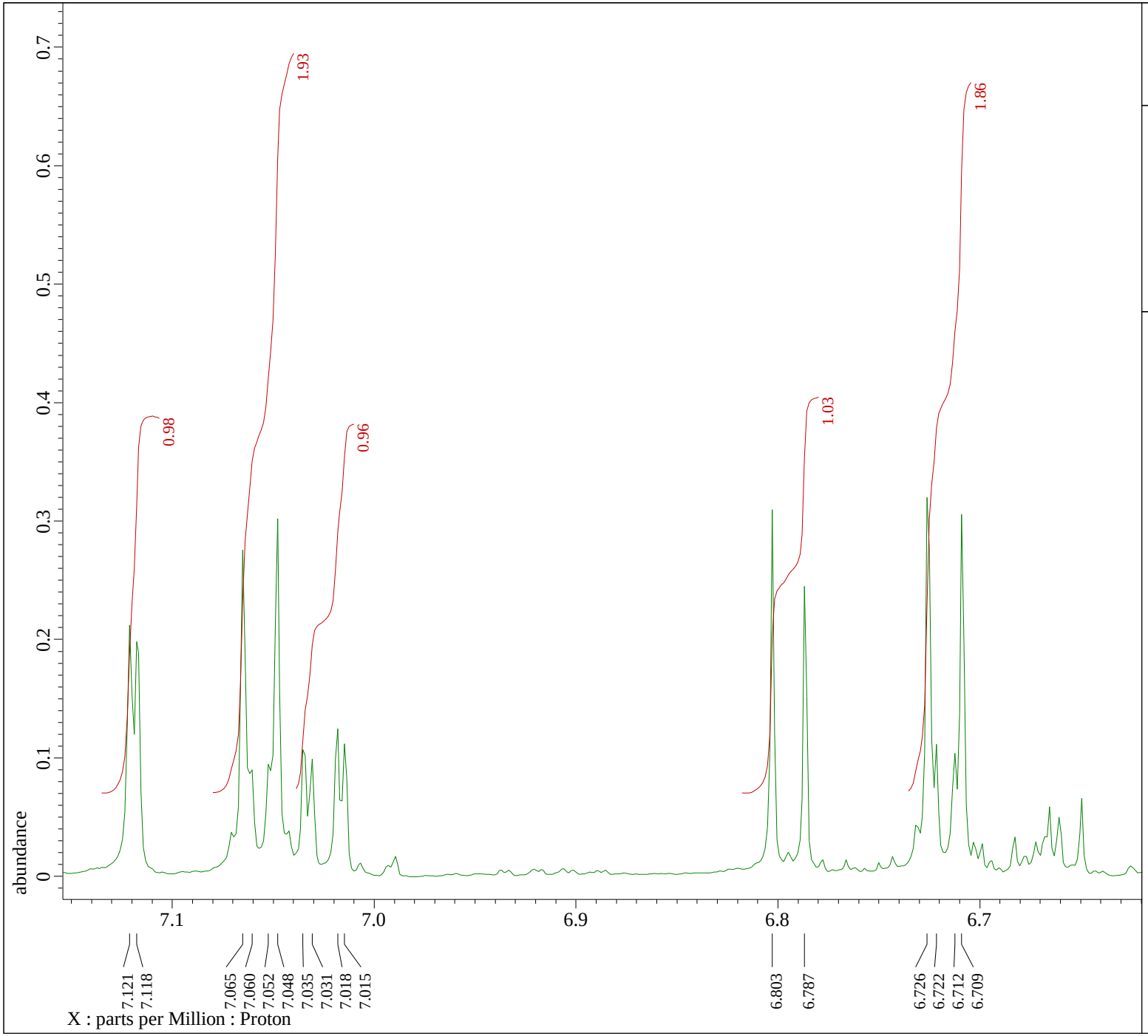

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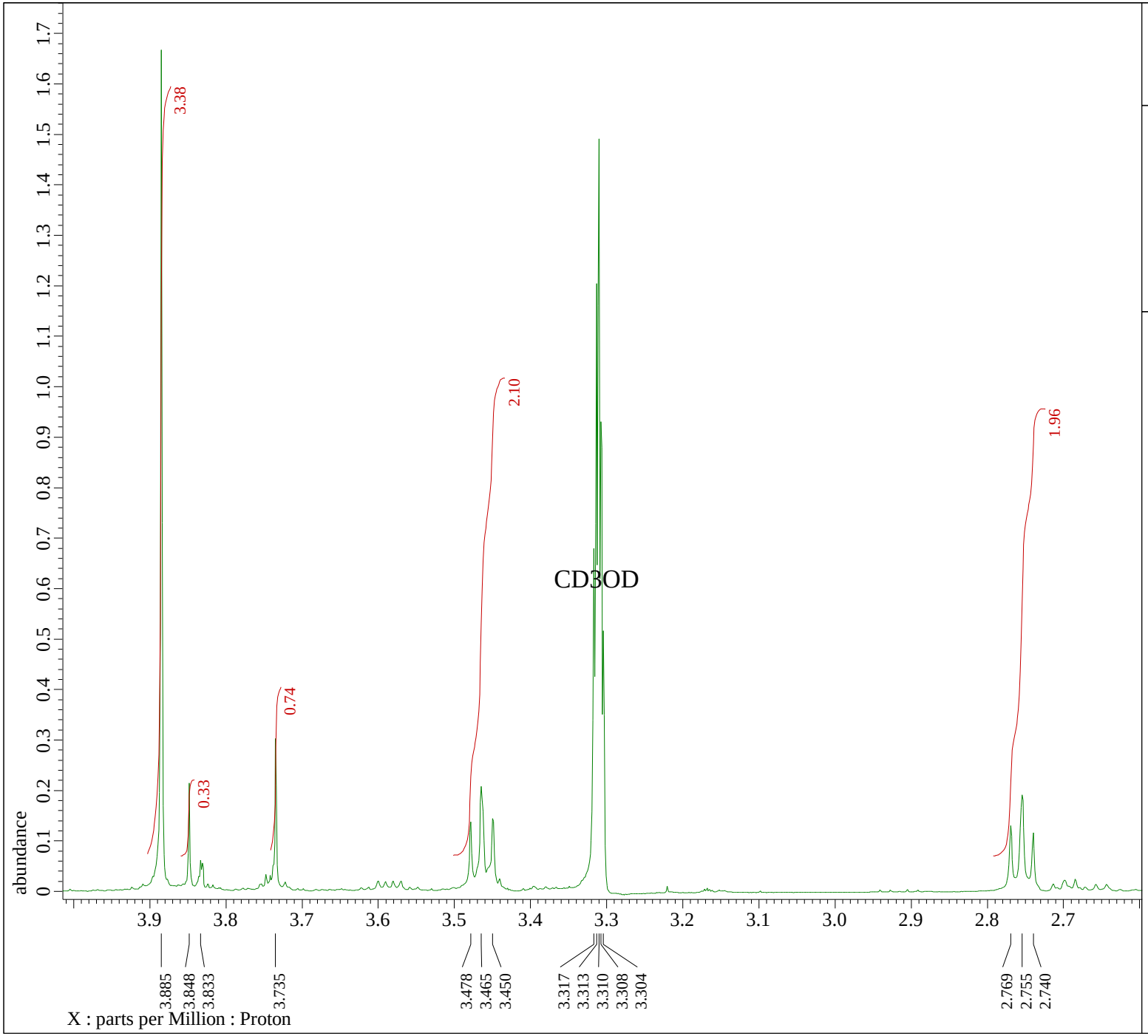

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X_Acq_Duration	= 1.74587904[s]
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X_Resolution	= 0.57277737[Hz]
X_Sweep	= 9.38438438[kHz]
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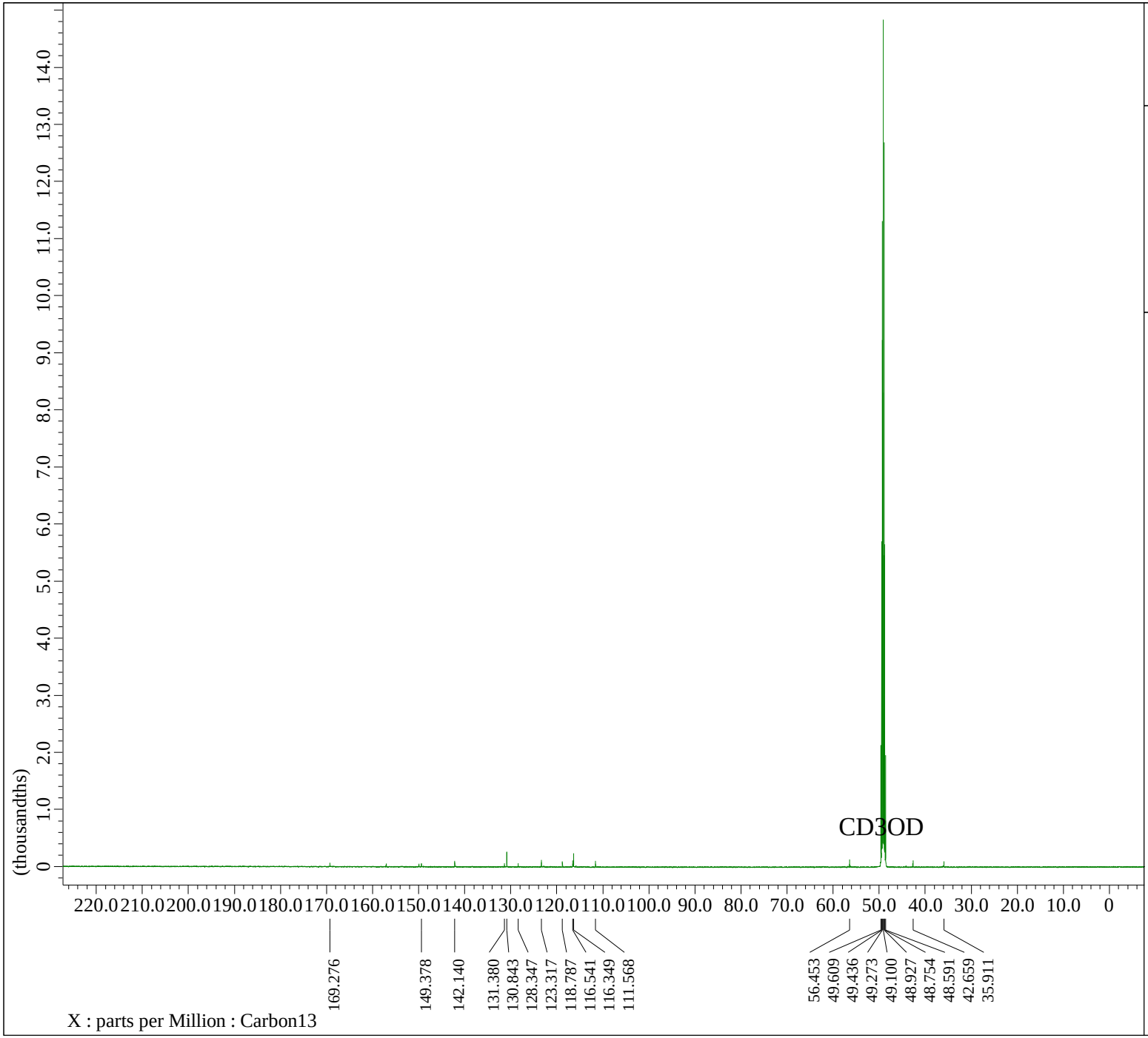
Fig. SI-2. 13C NMR Spectra

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X_Resolution	= 1.20718268[Hz]
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X_Sweep_Clipped	= 31.64556962[kHz]
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Irr_Freq	= 500.15991521[MHz]
Irr_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= FALSE
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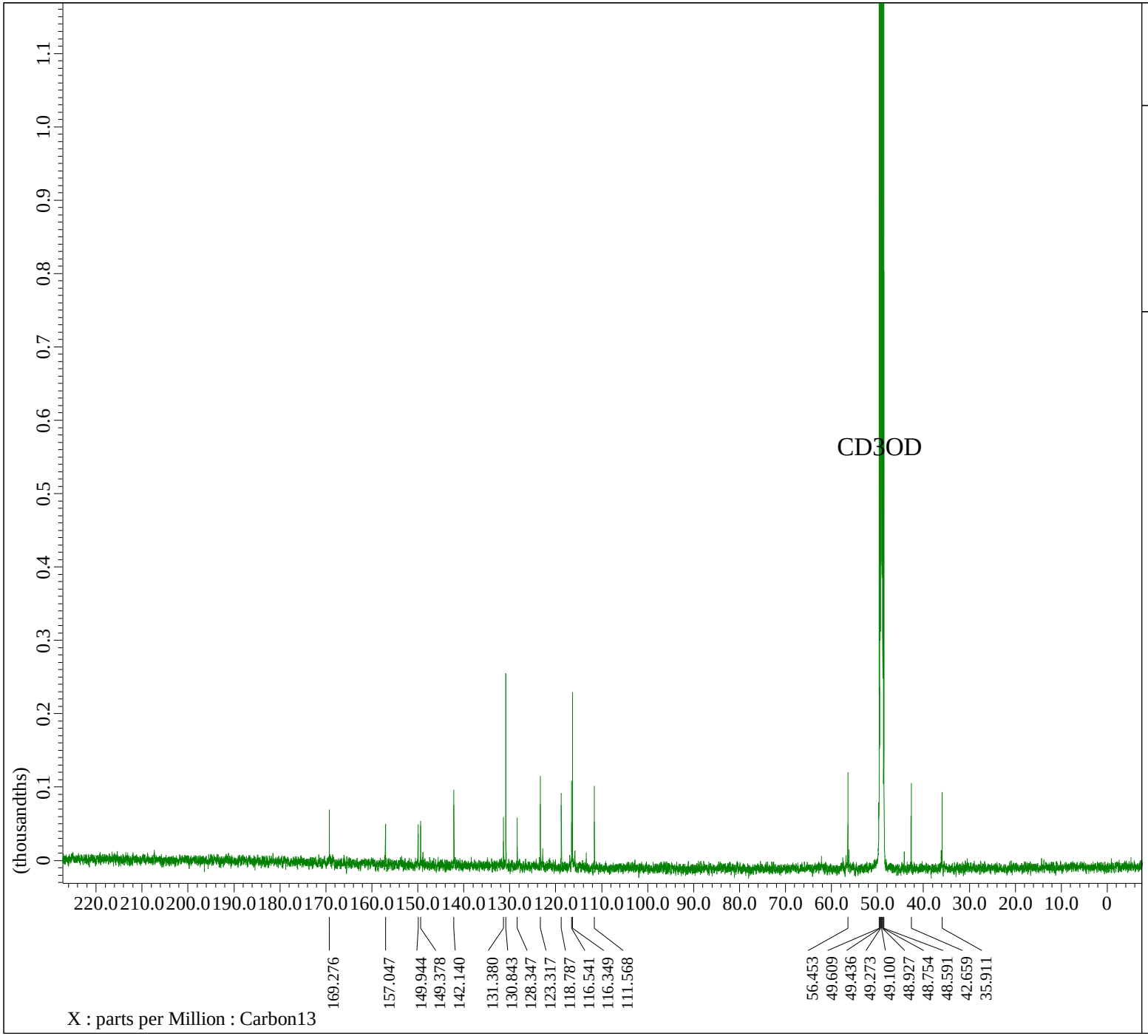


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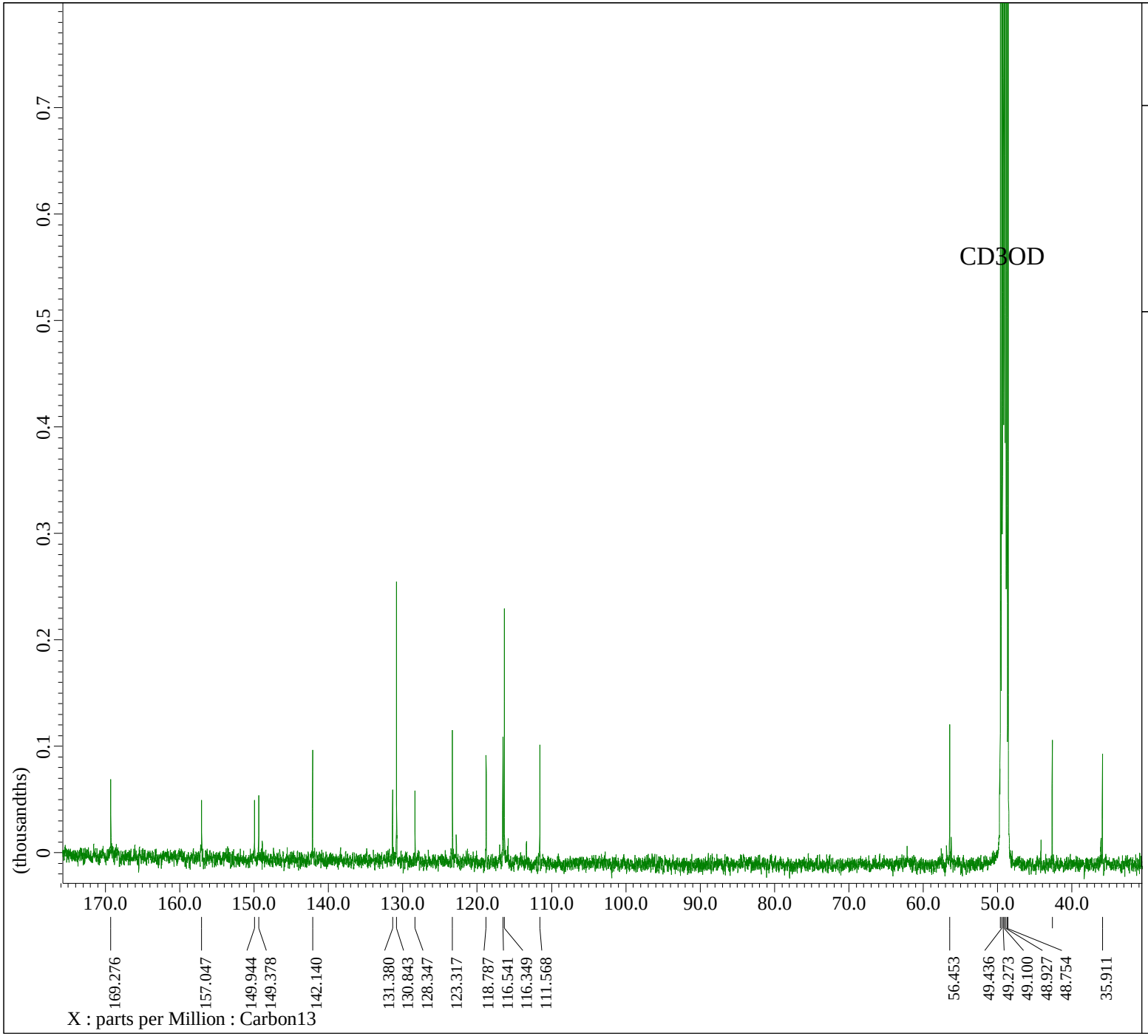


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Irr_Atn_Dec_Calc	= 30.11[dB]
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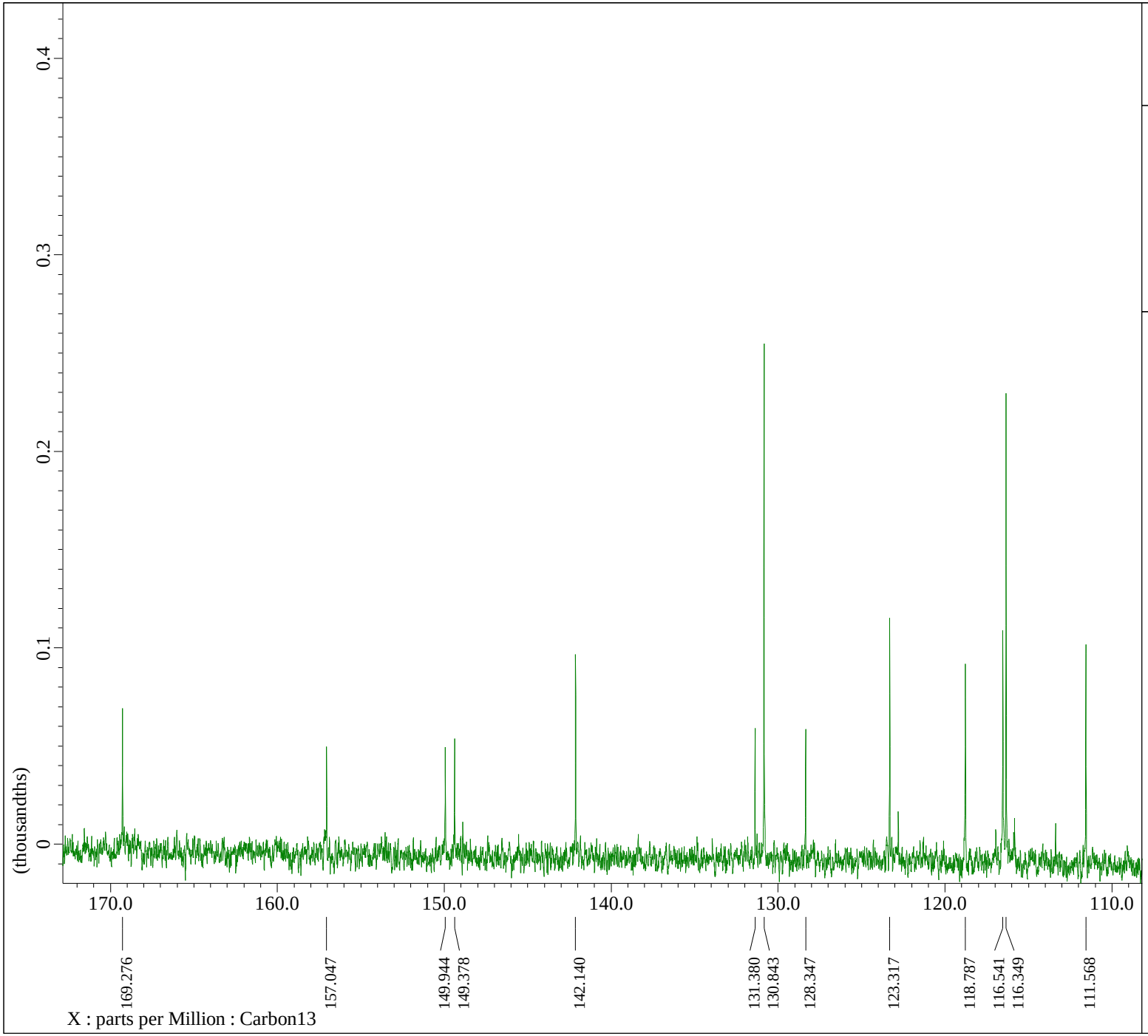

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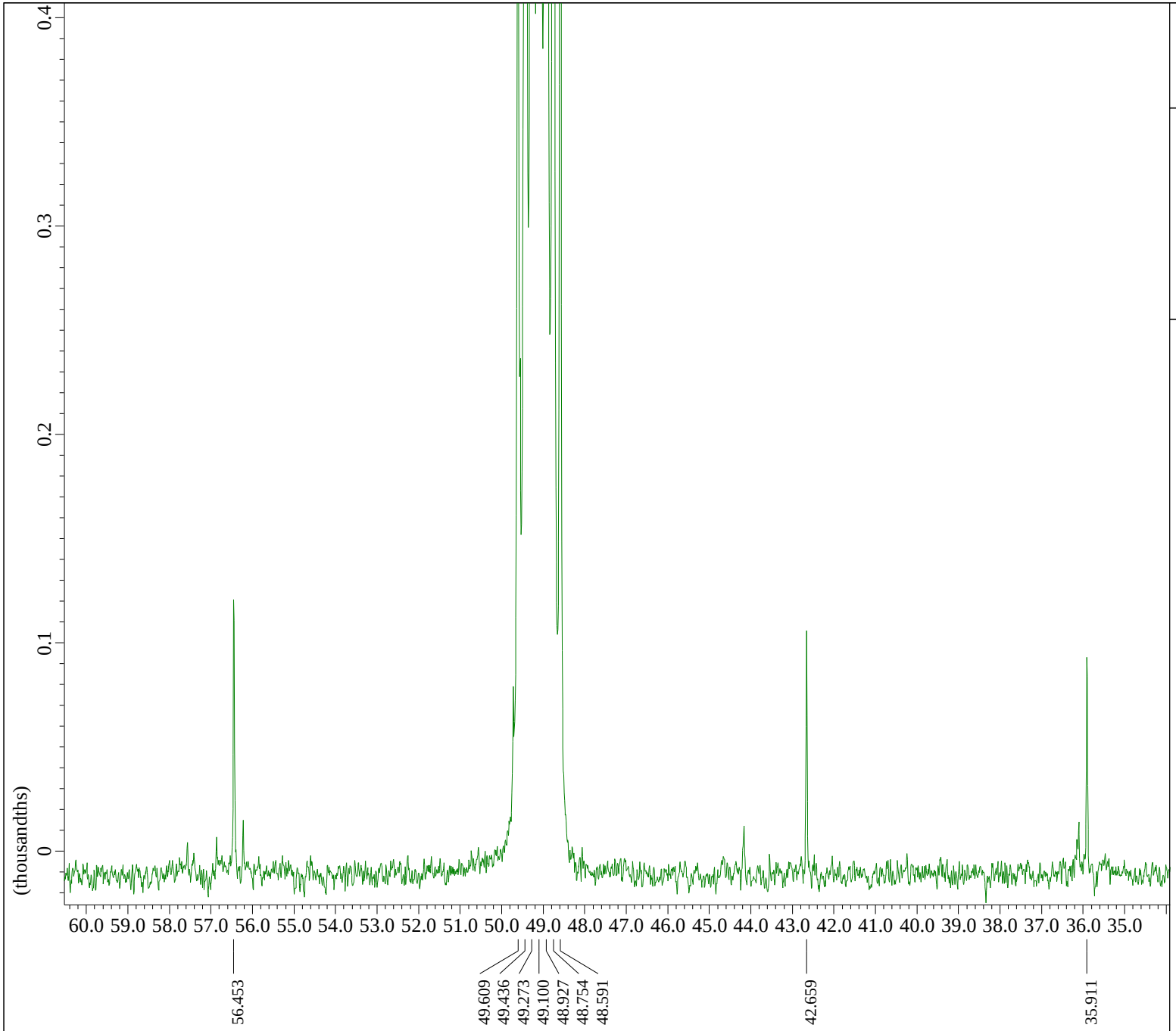
Dim_Size	= 26214
X_Domain	= Carbon13
Dim_Title	= Carbon13
Dim_Units	= [ppm]
Dimensions	= X
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.82837504[s]
X_Domain	= Carbon13
X_Freq	= 125.76529768[MHz]
X_Offset	= 100[ppm]
X_Points	= 32768
X_Prescans	= 4
X_Resolution	= 1.20718268[Hz]
X_Sweep	= 39.55696203[kHz]
X_Sweep_Clipped	= 31.64556962[kHz]
Irr_Domain	= Proton
Irr_Freq	= 500.15991521[MHz]
Irr_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= FALSE
Scans	= 5000
Total_Scans	= 5000
Relaxation_Delay	= 2[s]
Recvr_Gain	= 36
Temp_Get	= 19.8[dC]
X_90_Width	= 11.3[us]
X_Acq_Time	= 0.82837504[s]
X_Angle	= 30[deg]
X_Atn	= 11[dB]
X_Pulse	= 3.76666667[us]
Irr_Atn_Dec	= 30.11[dB]
Irr_Atn_Dec_Calc	= 30.11[dB]
Irr_Atn_Dec_Default_Calc	= 30.11[dB]
Irr_Atn_Noe	= 30.11[dB]
Irr_Dec_Bandwidth_Hz	= 5.97826087[kHz]

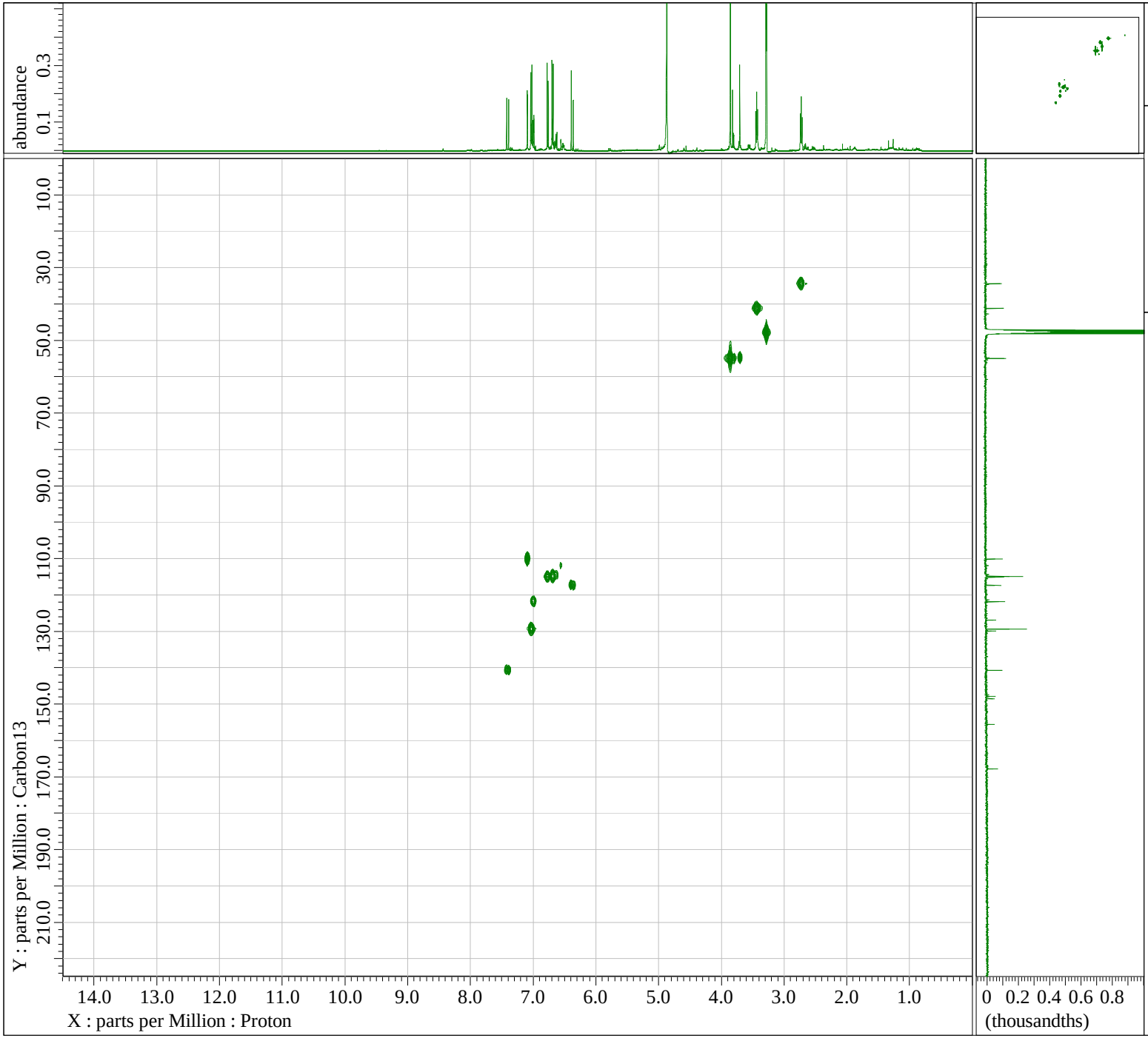



```
---- PROCESSING PARAMETERS ----
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1 )
fft( 1, TRUE, TRUE )
machinephase
ppm

Derived from: 62845-BR-F3.7_Carbon-1-1.jdf
```

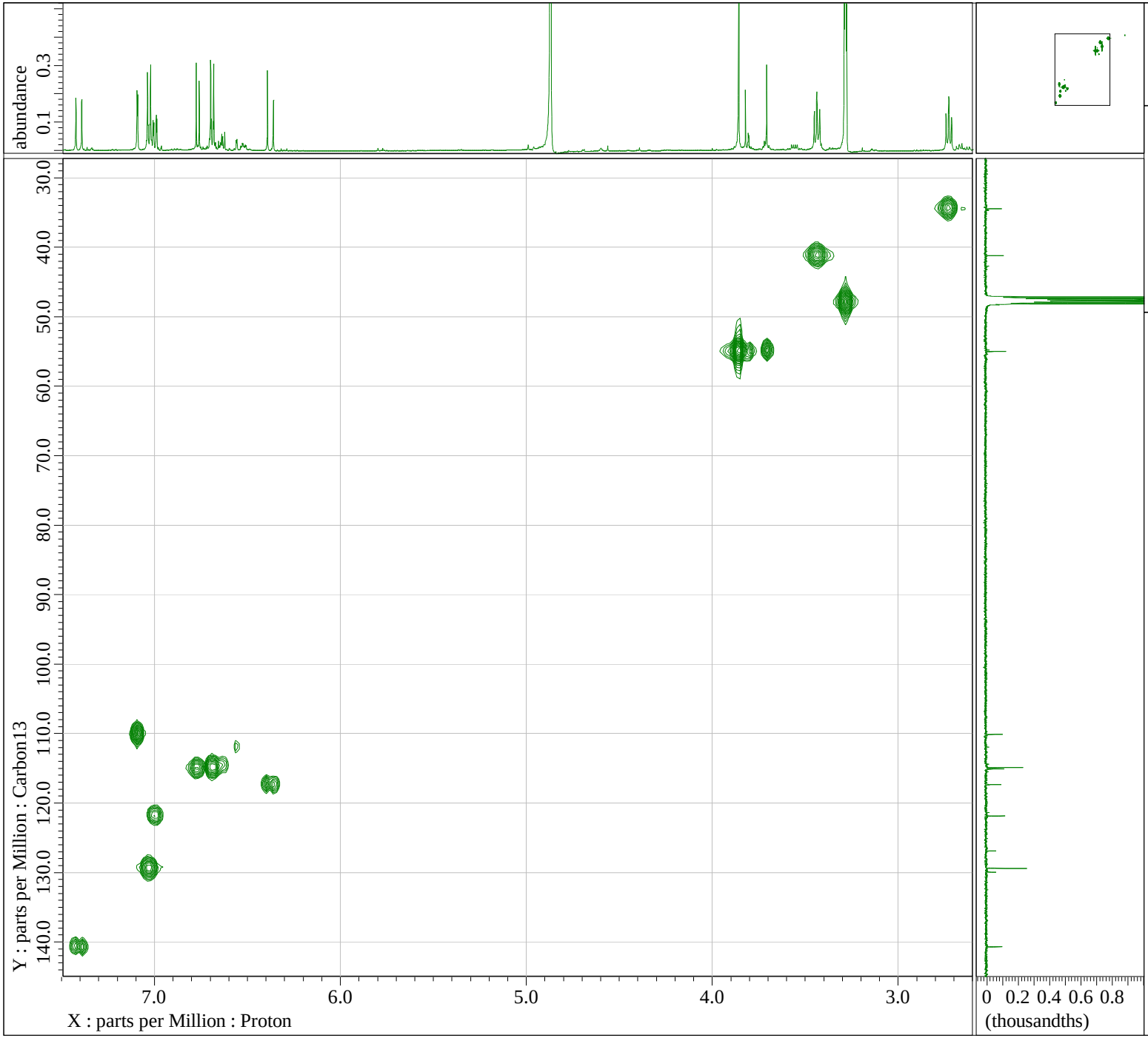
Filename	= 62845-BR-F3.7_Carb
Author	= delta
Experiment	= carbon.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 10:51:
Revision_Time	= 31-OCT-2022 13:10:
Comment	= single pulse decou
Data_Format	= 1D COMPLEX
Dim_Size	= 26214
X_Domain	= Carbon13
Dim_Title	= Carbon13
Dim_Units	= [ppm]
Dimensions	= X
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.82837504[s]
X_Domain	= Carbon13
X_Freq	= 125.76529768[MHz]
X_Offset	= 100[ppm]
X_Points	= 32768
X_Prescans	= 4
X_Resolution	= 1.20718268[Hz]
X_Sweep	= 39.55696203[kHz]
X_Sweep_Clipped	= 31.64556962[kHz]
Irr_Domain	= Proton
Irr_Freq	= 500.15991521[MHz]
Irr_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= FALSE
Scans	= 5000
Total_Scans	= 5000
Relaxation_Delay	= 2[s]
Recvr_Gain	= 36
Temp_Get	= 19.8[dC]
X_90_Width	= 11.3[us]
X_Acq_Time	= 0.82837504[s]
X_Angle	= 30[deg]
X_Atn	= 11[dB]
X_Pulse	= 3.76666667[us]
Irr_Atn_Dec	= 30.11[dB]
Irr_Atn_Dec_Calc	= 30.11[dB]
Irr_Atn_Dec_Default_Calc	= 30.11[dB]
Irr_Atn_Noe	= 30.11[dB]
Irr_Dec_Bandwidth_Hz	= 5.97826087[kHz]

Fig. SI-3. HMQC Spectra




```
---- PROCESSING PARAMETERS ----
sinbell4( -60, 160 )
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
[transpose]
```

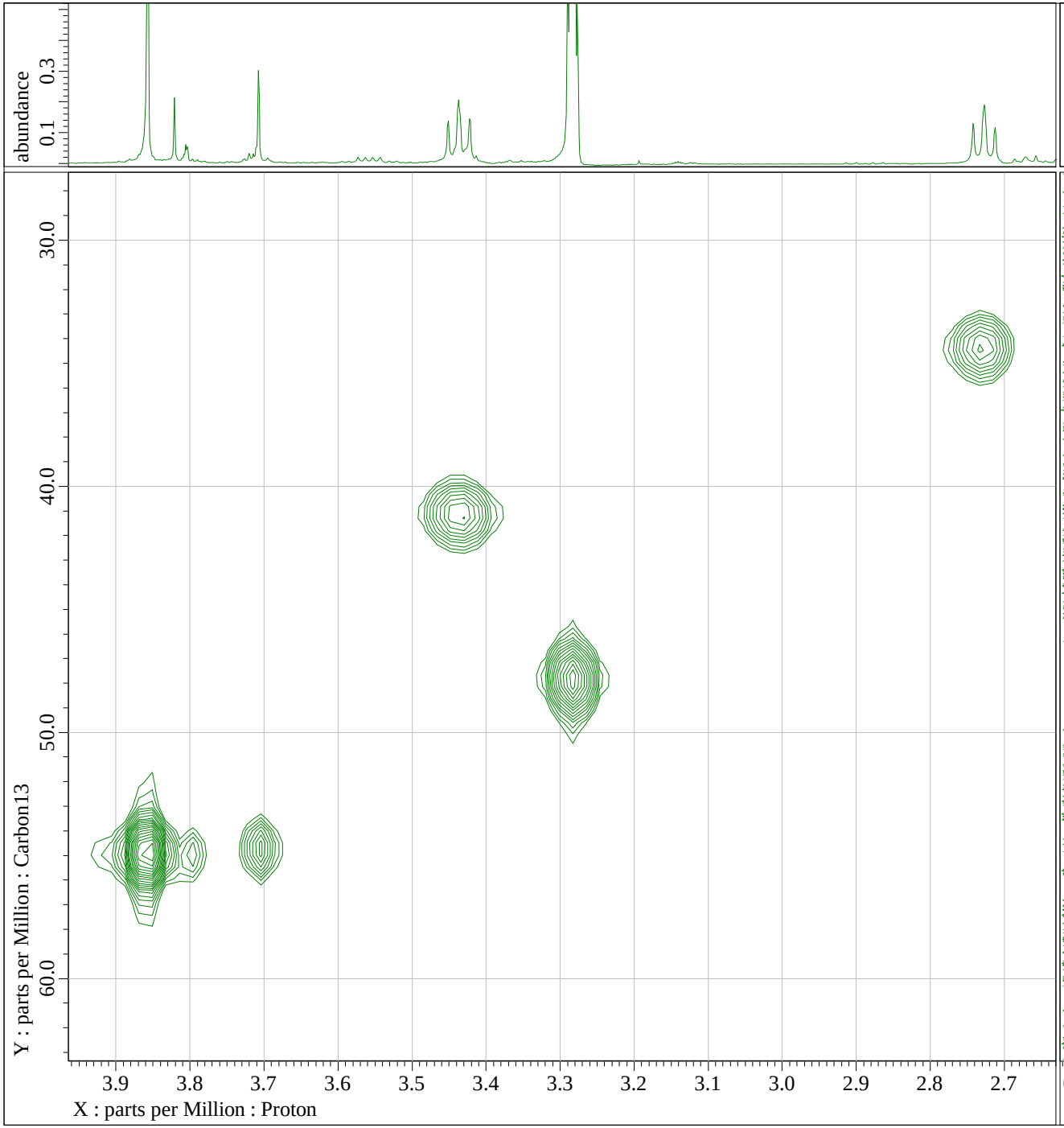
Filename	= 62845-BR-F3.7_HMQC
Author	= delta
Experiment	= hmqc.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 15:52:
Revision_Time	= 31-OCT-2022 13:16:
Comment	= gradient enhanced
Data_Format	= 2D REAL REAL
Dim_Size	= 819, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.10911744[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 1024
X_Prescans	= 4
X_Resolution	= 9.16443788[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 16
Total_Scans	= 4096
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.3[dC]
X_Acq_Time	= 0.10911744[s]
X_Atn	= 8.9[dB]



JEOL

```
---- PROCESSING PARAMETERS ----
sinbell4( -60, 160 )
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
[transpose]
```

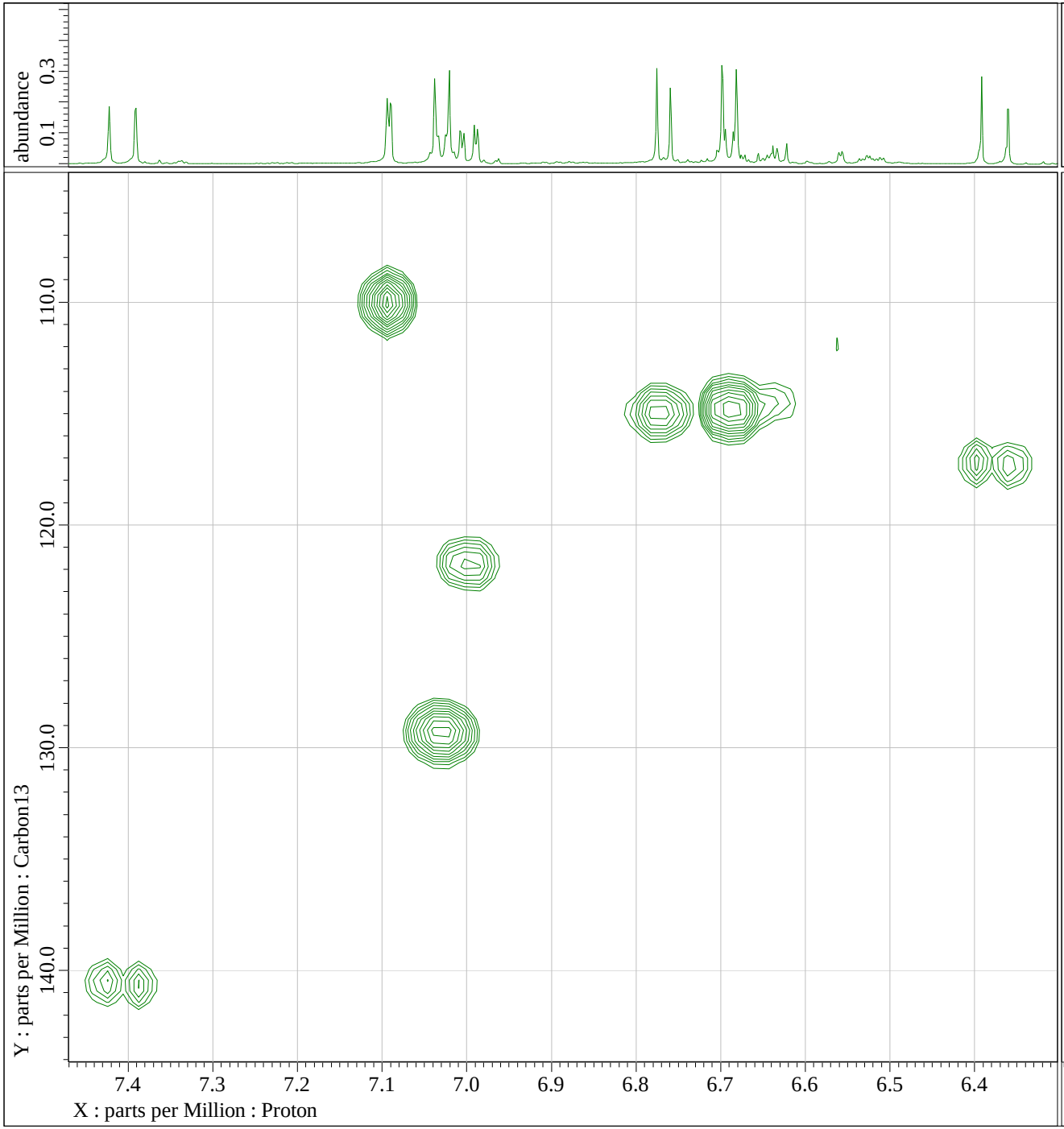
Filename	= 62845-BR-F3.7_HMQC
Author	= delta
Experiment	= hmqc.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 15:52:
Revision_Time	= 31-OCT-2022 13:16:
Comment	= gradient enhanced
Data_Format	= 2D REAL REAL
Dim_Size	= 819, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.10911744[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 1024
X_Prescans	= 4
X_Resolution	= 9.16443788[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 16
Total_Scans	= 4096
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.3[dC]
X_Acq_Time	= 0.10911744[s]
X_Atn	= 8.9[dB]



JEOL

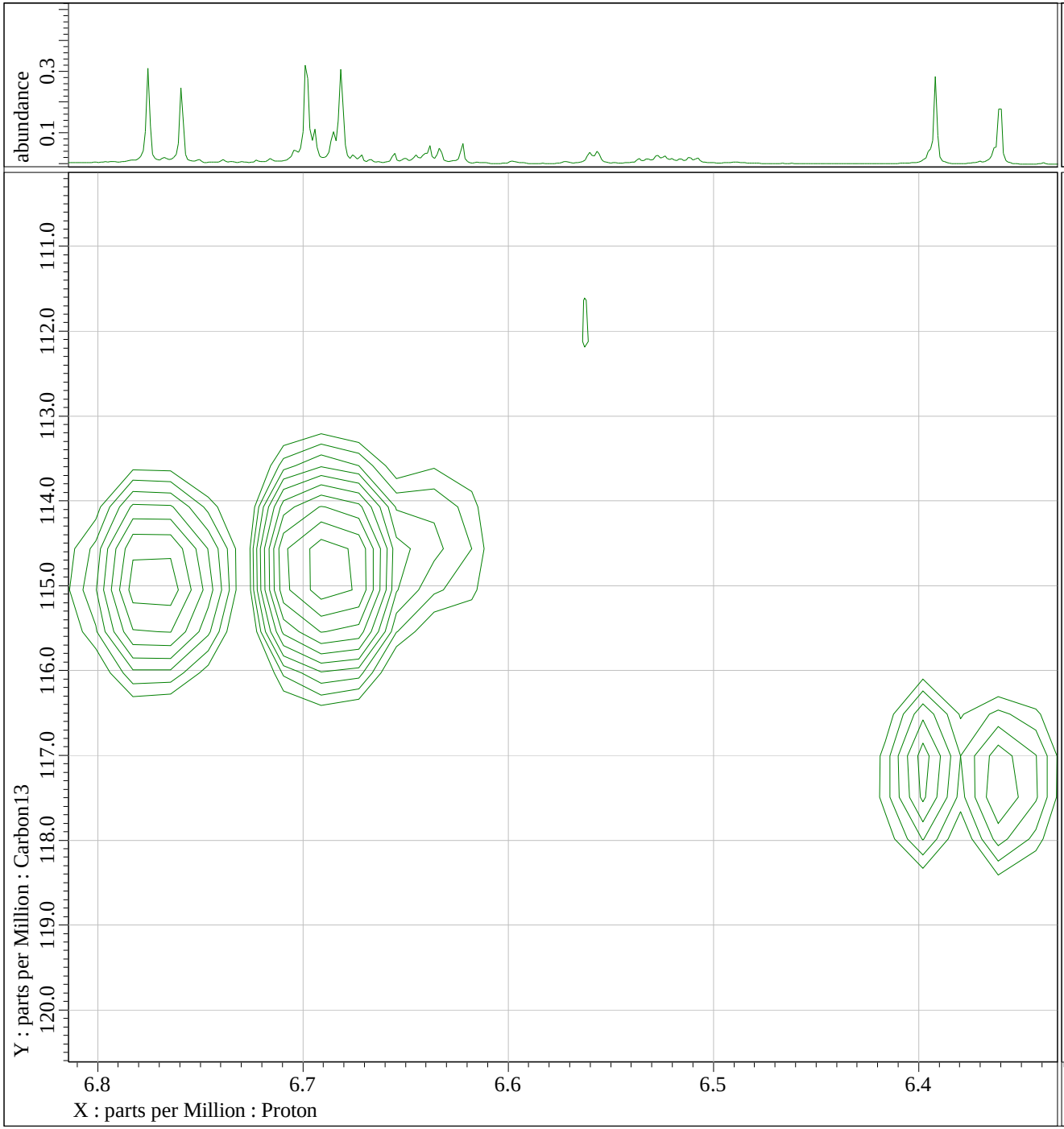
```
---- PROCESSING PARAMETERS ----
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1 )
fft( 1, TRUE, TRUE )
machinephase
ppm
```

Filename	= 62845-BR-F3.7_HMQC
Author	= delta
Experiment	= hmqc.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 15:52:
Revision_Time	= 31-OCT-2022 13:16:
Comment	= gradient enhanced
Data_Format	= 2D REAL REAL
Dim_Size	= 819, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.10911744[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 1024
X_Prescans	= 4
X_Resolution	= 9.16443788[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 16
Total_Scans	= 4096
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.3[dC]
X_Acq_Time	= 0.10911744[s]
X_Atn	= 8.9[dB]




```
---- PROCESSING PARAMETERS ----
sinbell4( -60, 160 )
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
[transpose]
```

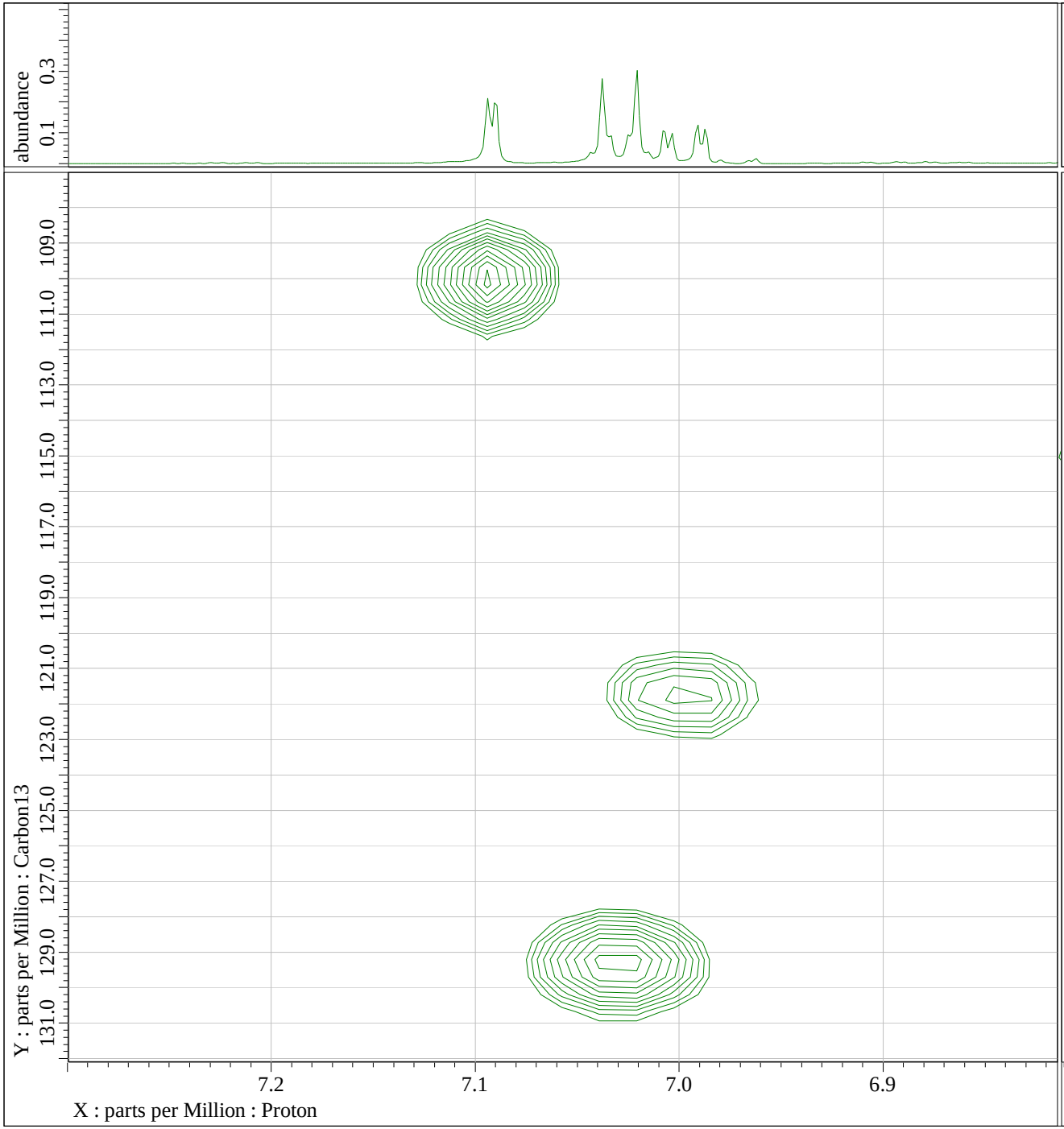
Filename	= 62845-BR-F3.7_HMQC
Author	= delta
Experiment	= hmqc.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 15:52:
Revision_Time	= 31-OCT-2022 13:16:
Comment	= gradient enhanced
Data_Format	= 2D REAL REAL
Dim_Size	= 819, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.10911744[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 1024
X_Prescans	= 4
X_Resolution	= 9.16443788[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 16
Total_Scans	= 4096
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.3[dC]
X_Acq_Time	= 0.10911744[s]
X_Atn	= 8.9[dB]



JEOL

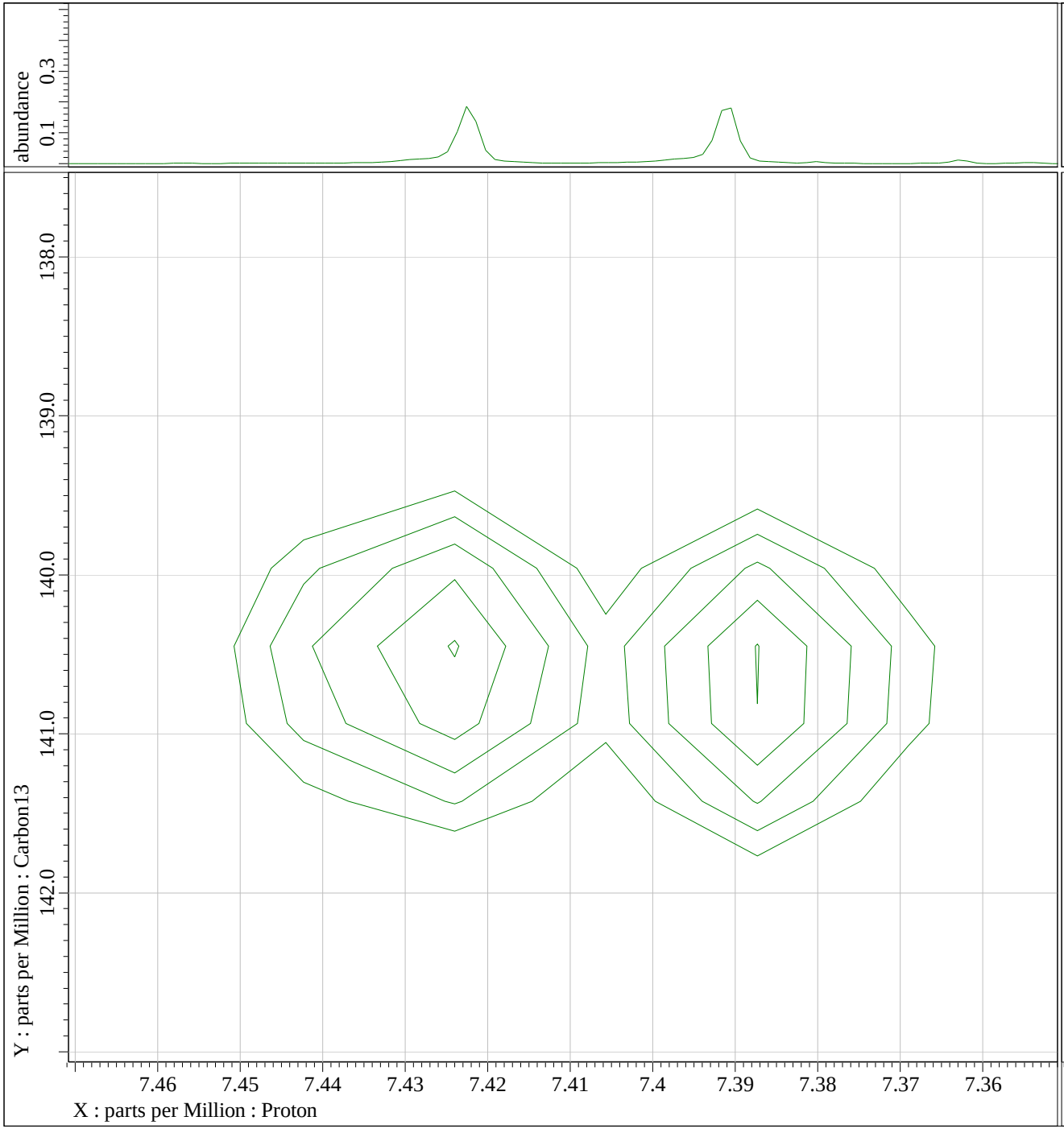
```
---- PROCESSING PARAMETERS ----
sinbell4( -60, 160 )
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
[transpose]
```

Filename	= 62845-BR-F3.7_HMQC
Author	= delta
Experiment	= hmqc.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 15:52:
Revision_Time	= 31-OCT-2022 13:16:
Comment	= gradient enhanced
Data_Format	= 2D REAL REAL
Dim_Size	= 819, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.10911744[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 1024
X_Prescans	= 4
X_Resolution	= 9.16443788[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 16
Total_Scans	= 4096
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.3[dC]
X_Acq_Time	= 0.10911744[s]
X_Atn	= 8.9[dB]




```
---- PROCESSING PARAMETERS ----
sinbell4( -60, 160 )
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
[transpose]
```

Filename	= 62845-BR-F3.7_HMQC
Author	= delta
Experiment	= hmqc.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 15:52:
Revision_Time	= 31-OCT-2022 13:16:
Comment	= gradient enhanced
Data_Format	= 2D REAL REAL
Dim_Size	= 819, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.10911744[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 1024
X_Prescans	= 4
X_Resolution	= 9.16443788[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 16
Total_Scans	= 4096
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.3[dC]
X_Acq_Time	= 0.10911744[s]
X_Atn	= 8.9[dB]

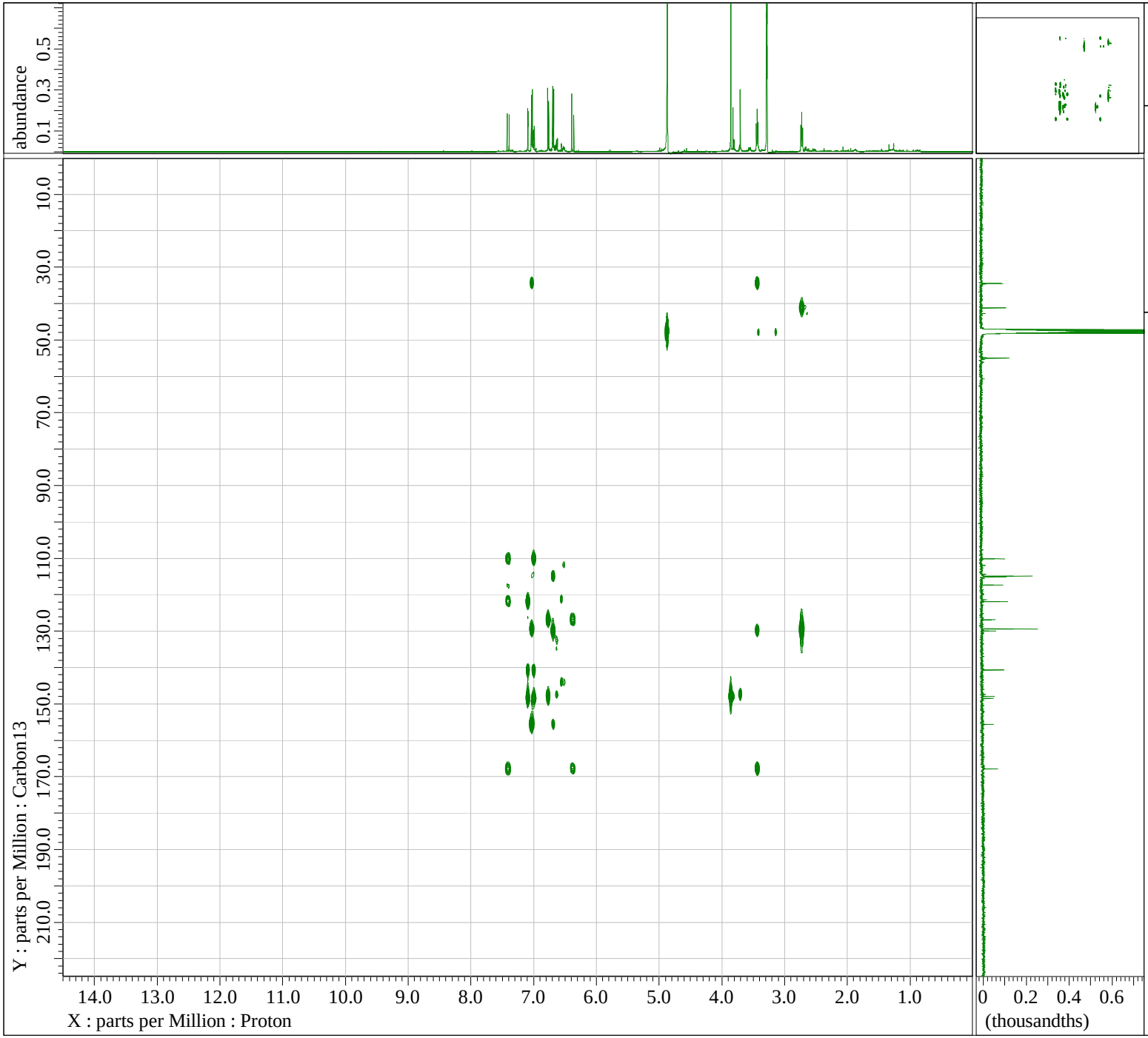


JEOL

```
---- PROCESSING PARAMETERS ----
sinbell4( -60, 160 )
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
[transpose]
```

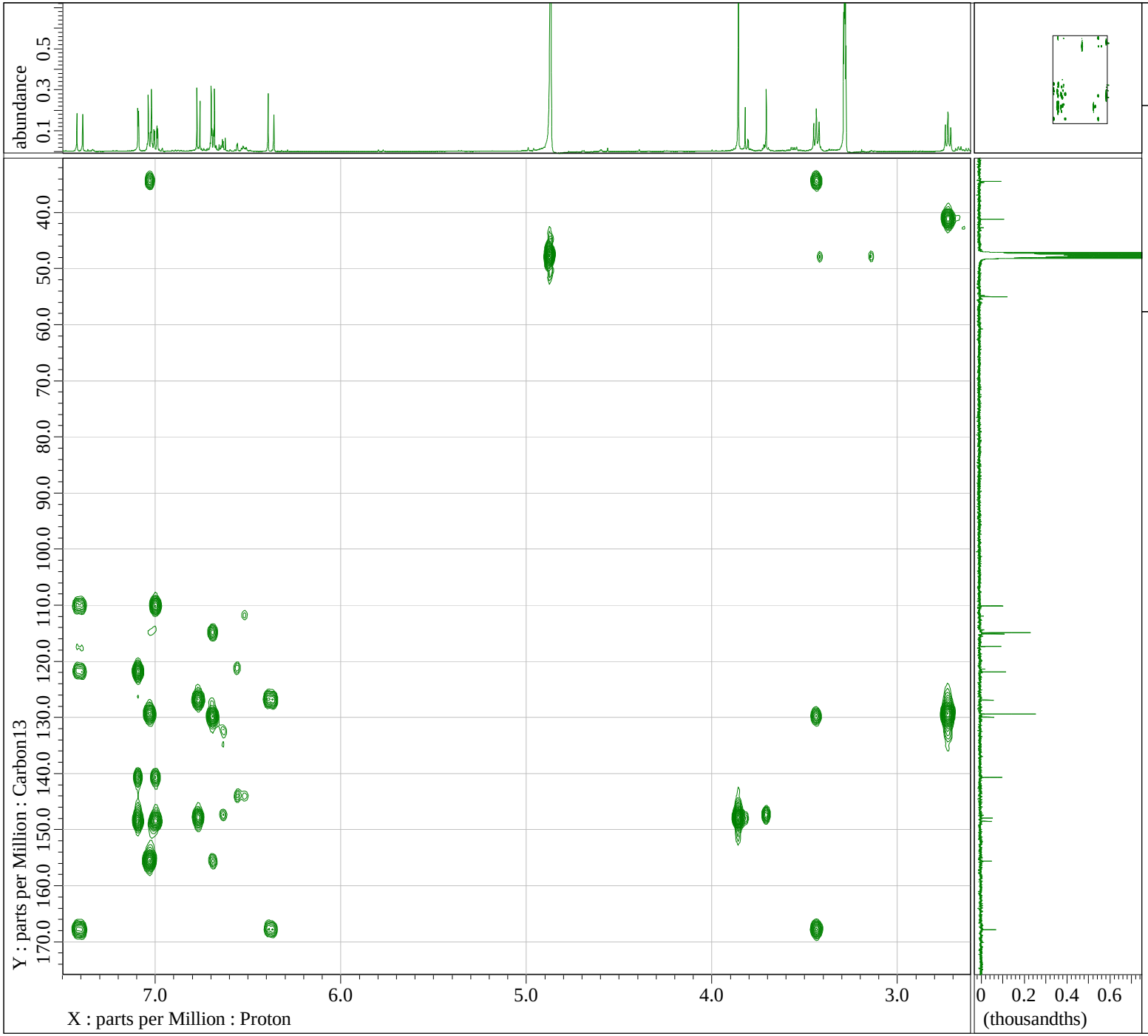
Filename	= 62845-BR-F3.7_HMQC
Author	= delta
Experiment	= hmqc.jxp
Sample_Id	= 62845-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 20-OCT-2022 15:52:
Revision_Time	= 31-OCT-2022 13:16:
Comment	= gradient enhanced
Data_Format	= 2D REAL REAL
Dim_Size	= 819, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500
X_Acq_Duration	= 0.10911744[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 1024
X_Prescans	= 4
X_Resolution	= 9.16443788[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 16
Total_Scans	= 4096
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.3[dC]
X_Acq_Time	= 0.10911744[s]
X_Atn	= 8.9[dB]

Fig. SI-4. HMBC Spectra




```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

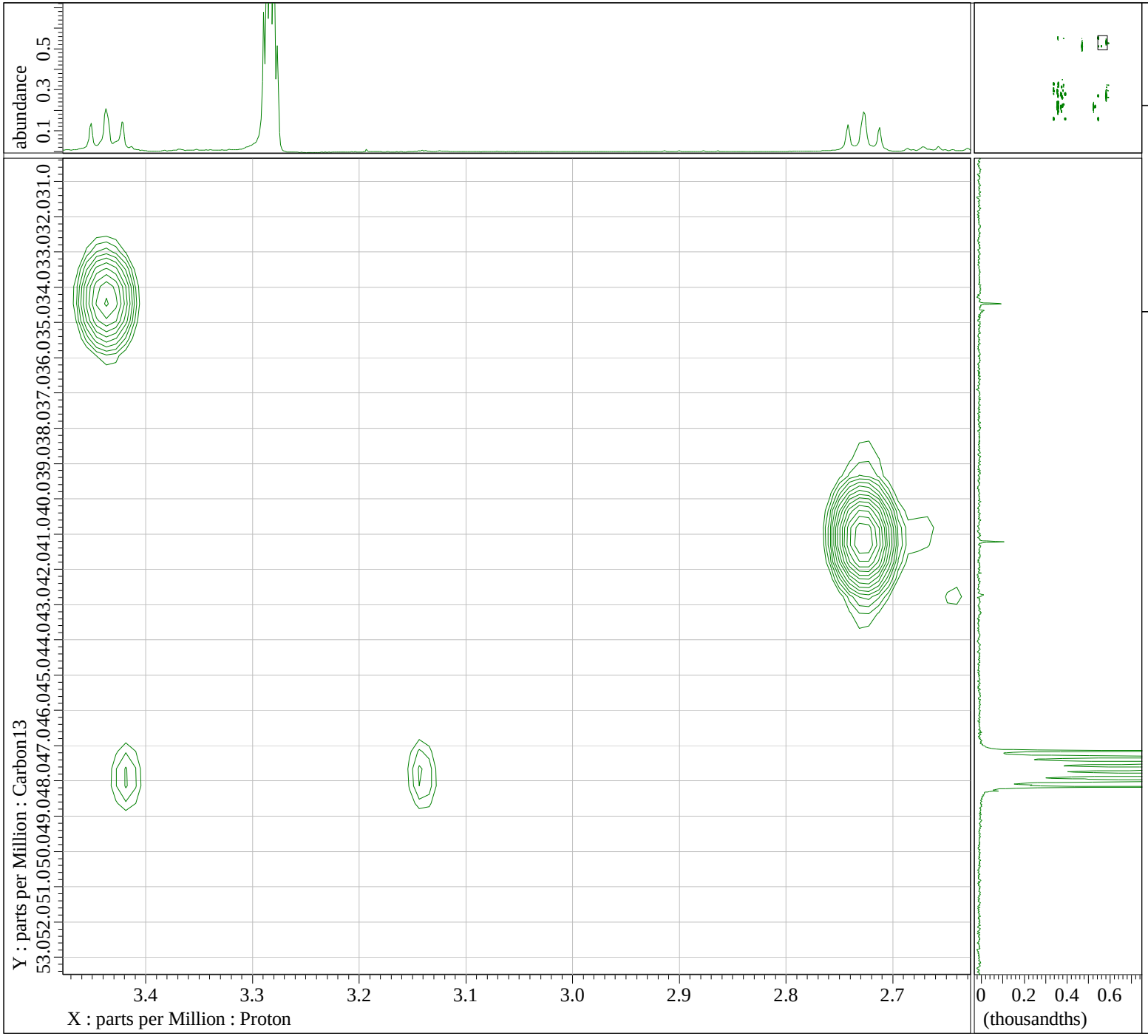
Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



JEOL

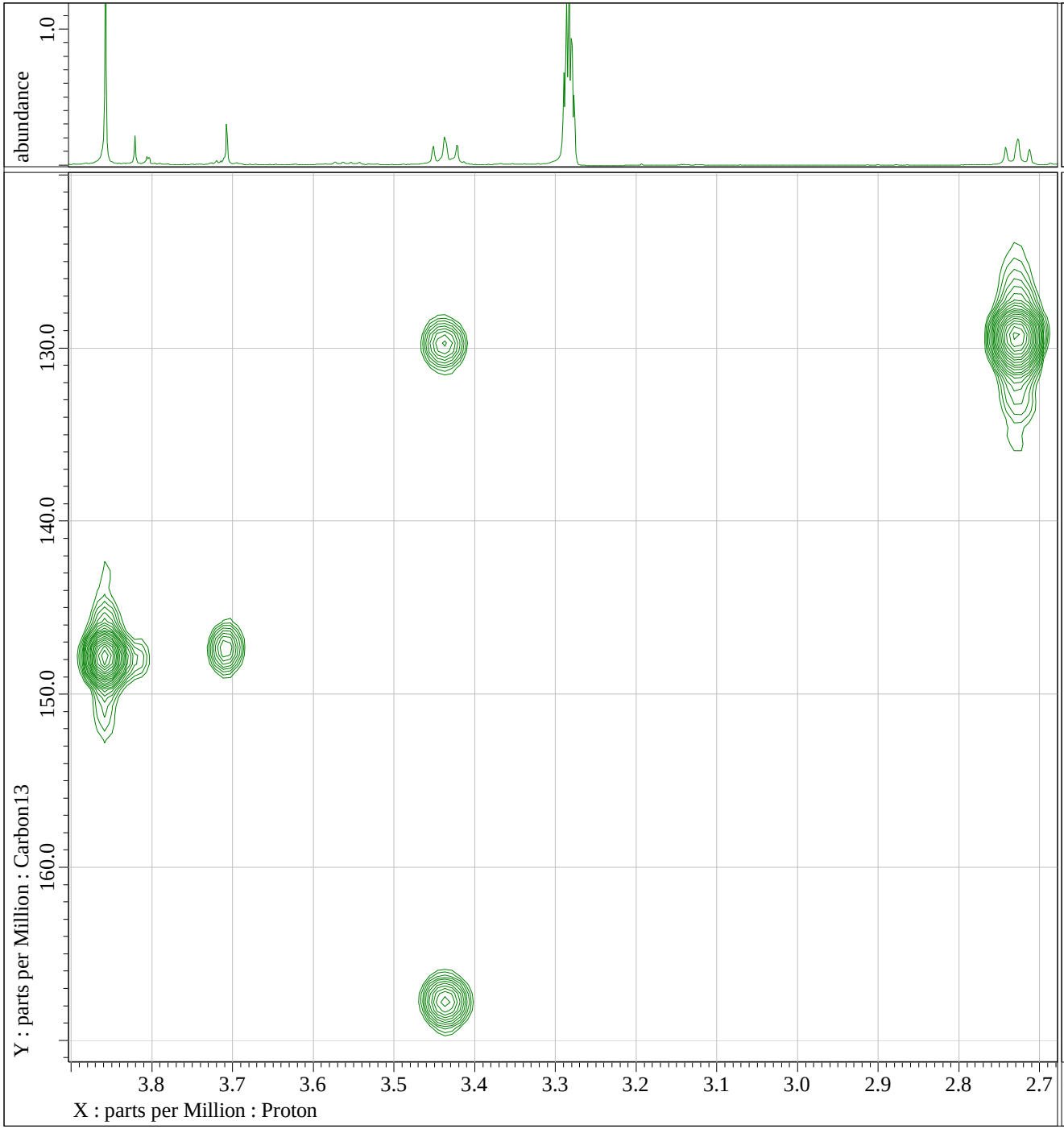
```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



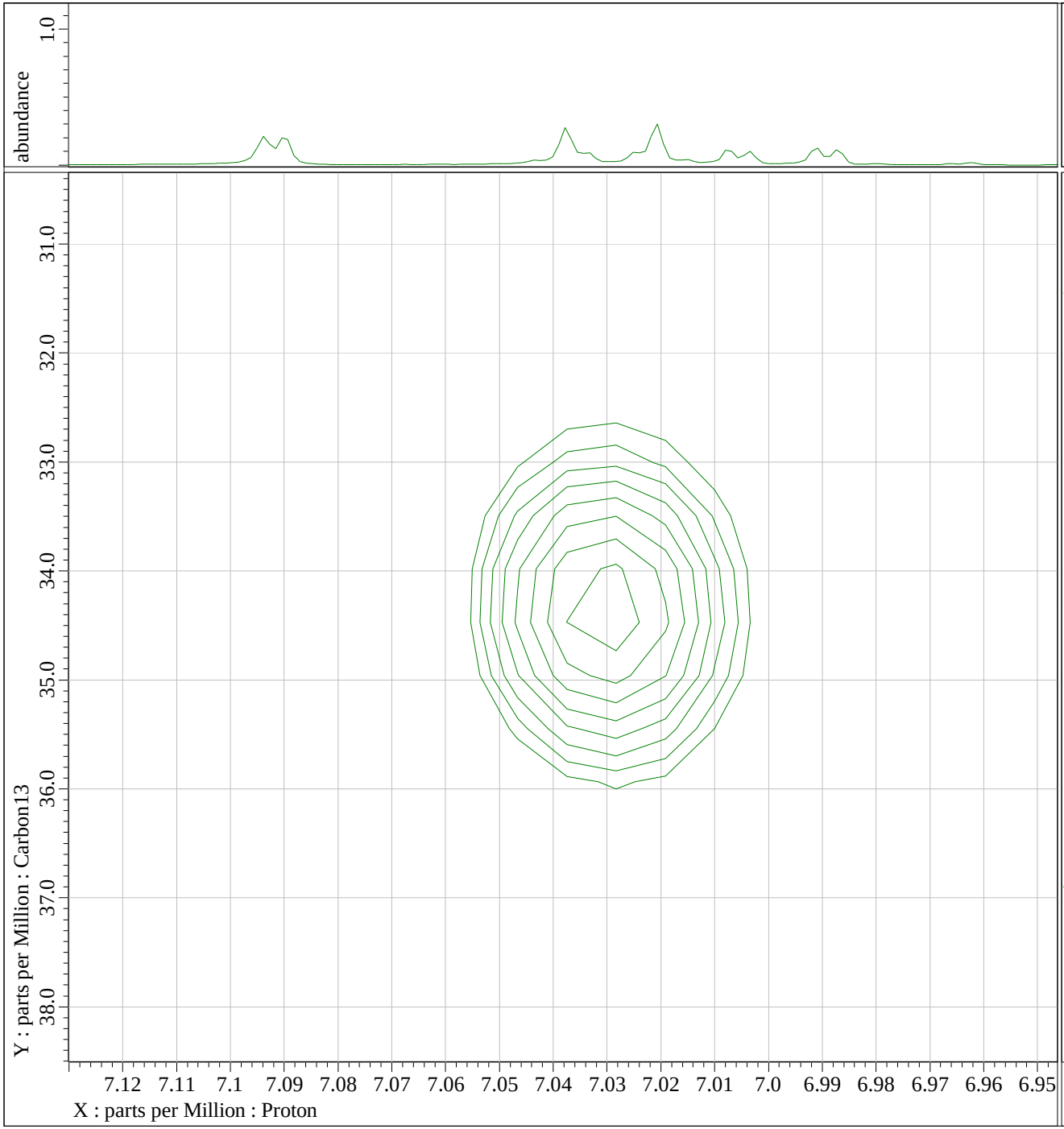

```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



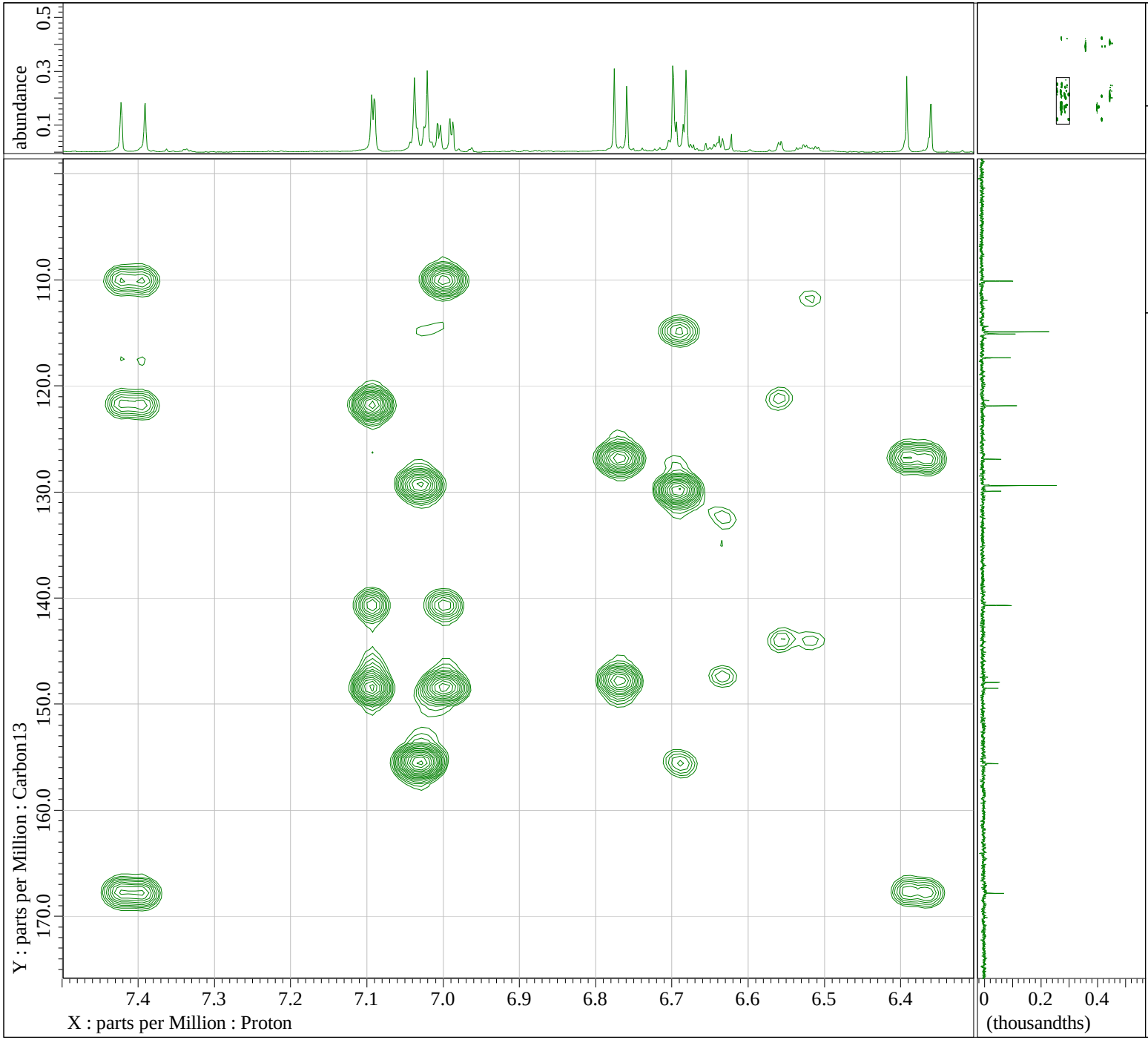

```
---- PROCESSING PARAMETERS ----
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1 )
fft( 1, TRUE, TRUE )
machinephase
ppm
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]




```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

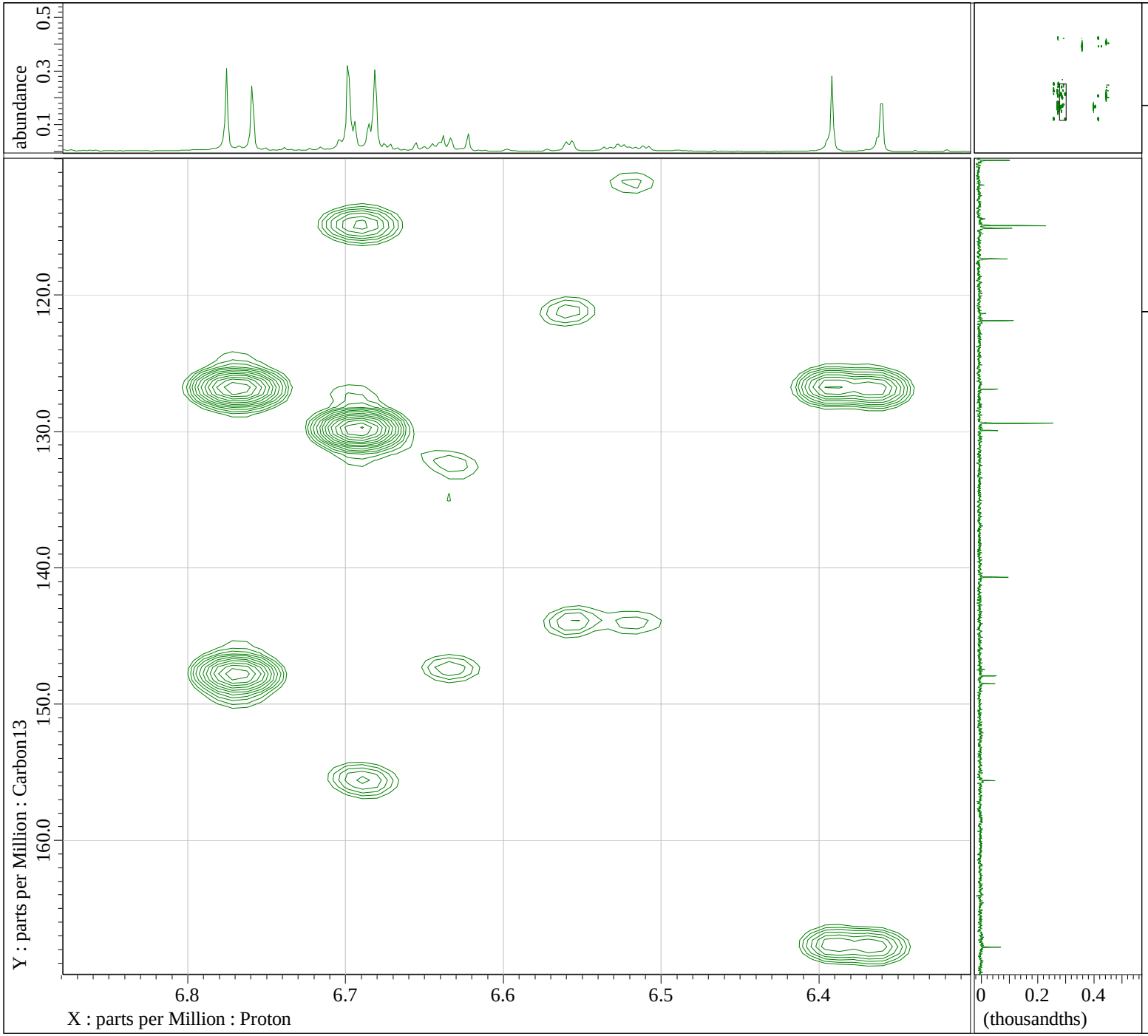
Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



JEOL

```
---- PROCESSING PARAMETERS ----
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1 )
fft( 1, TRUE, TRUE )
machinephase
ppm
```

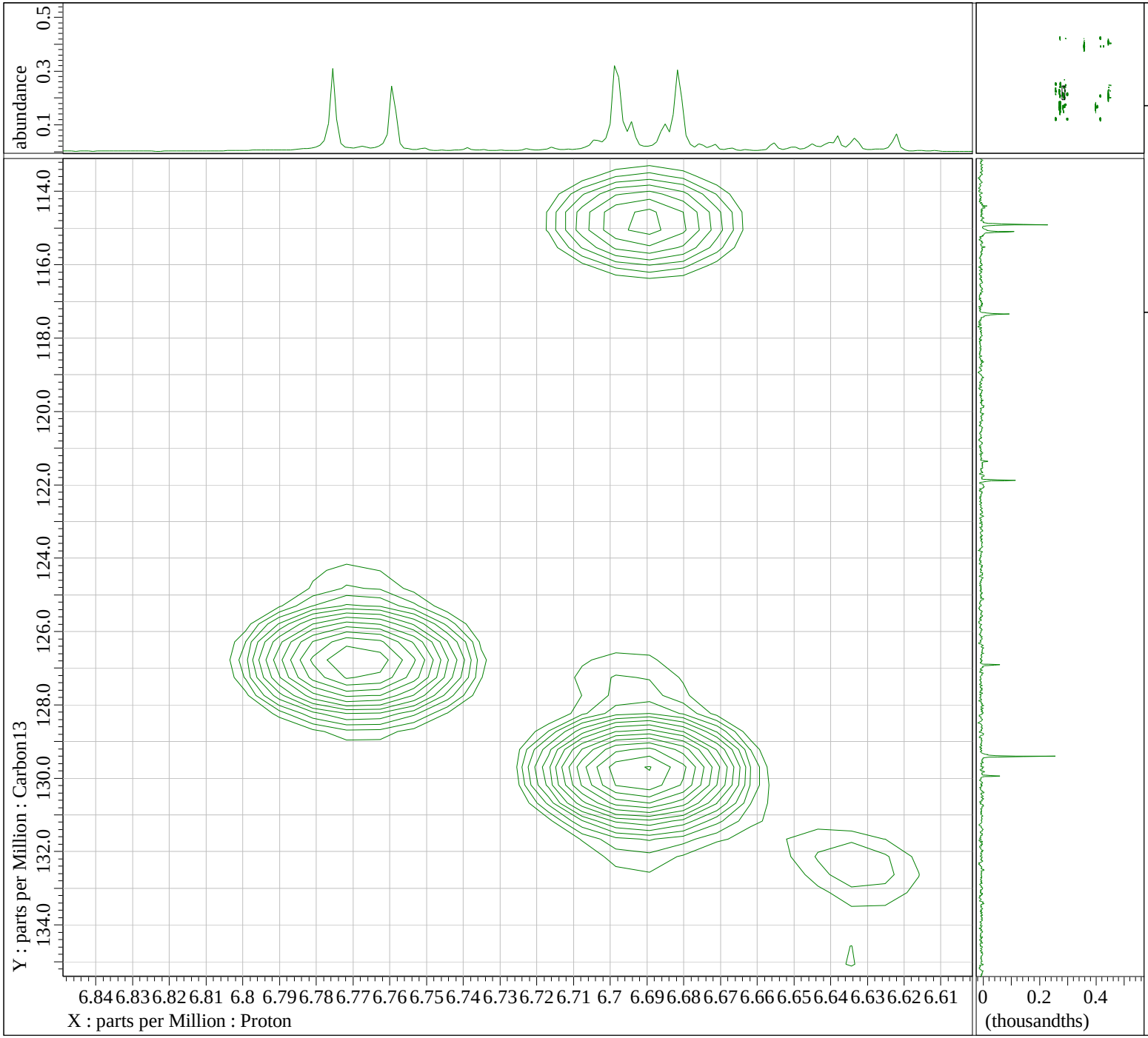
Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



JEOL

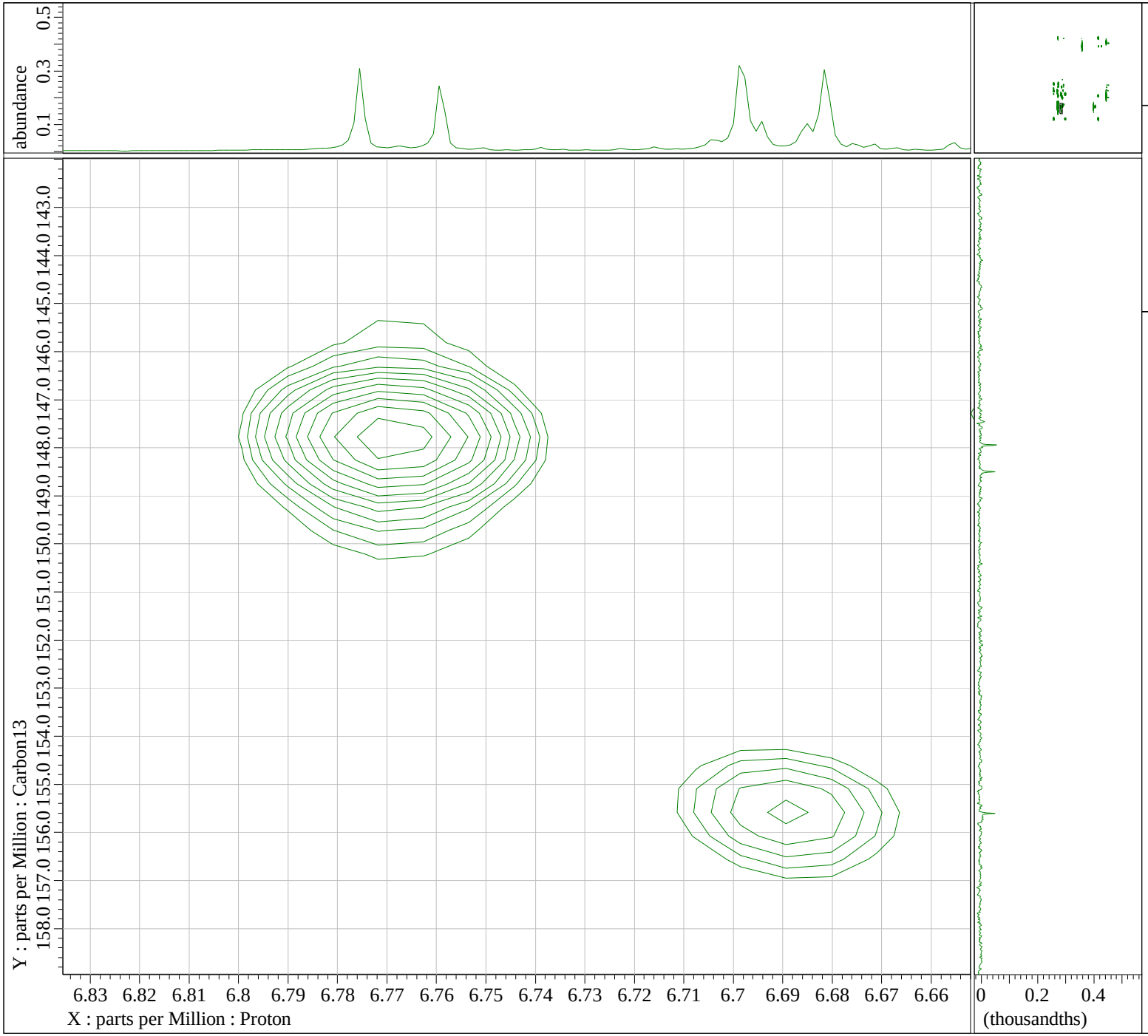
```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



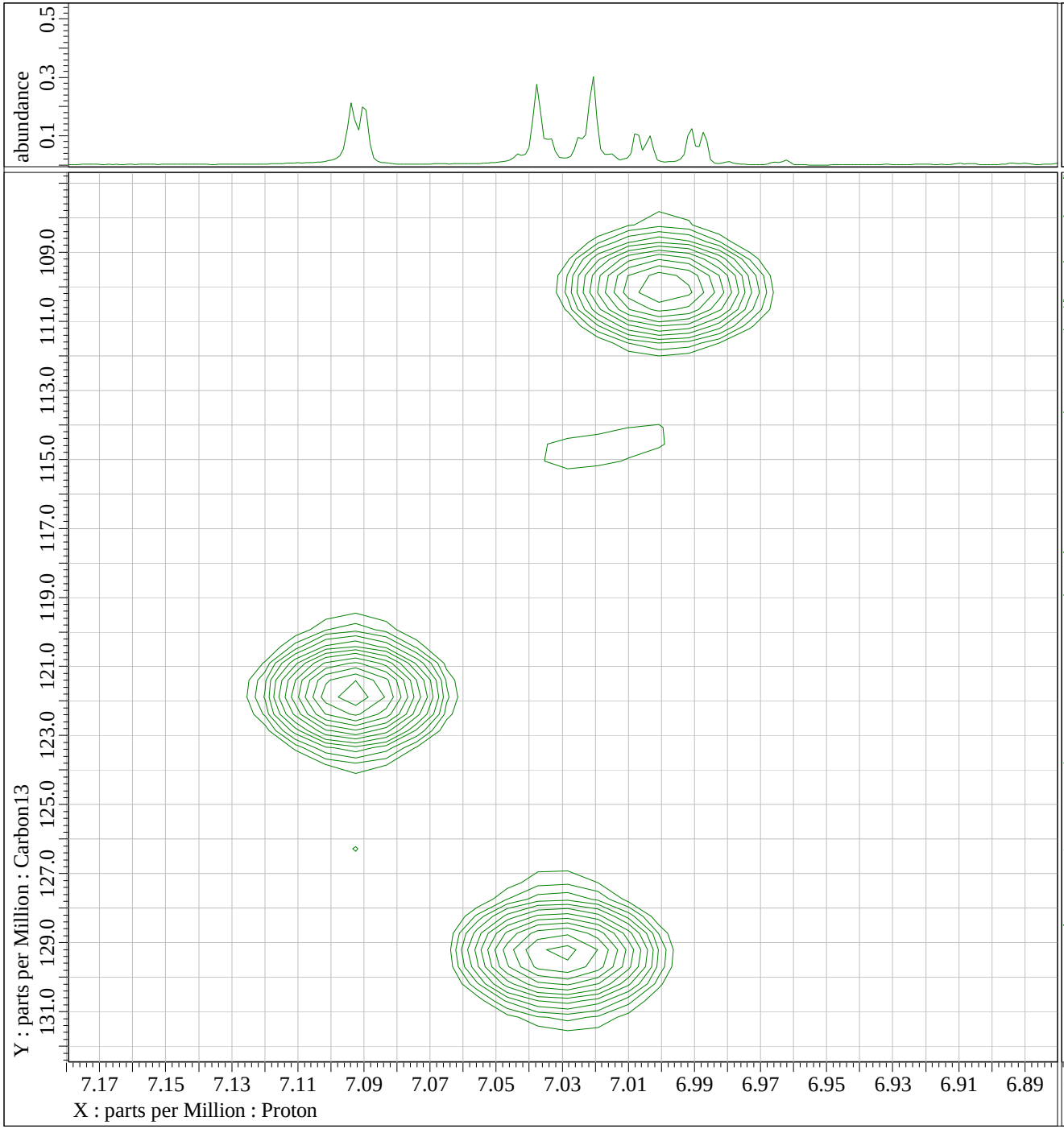

```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



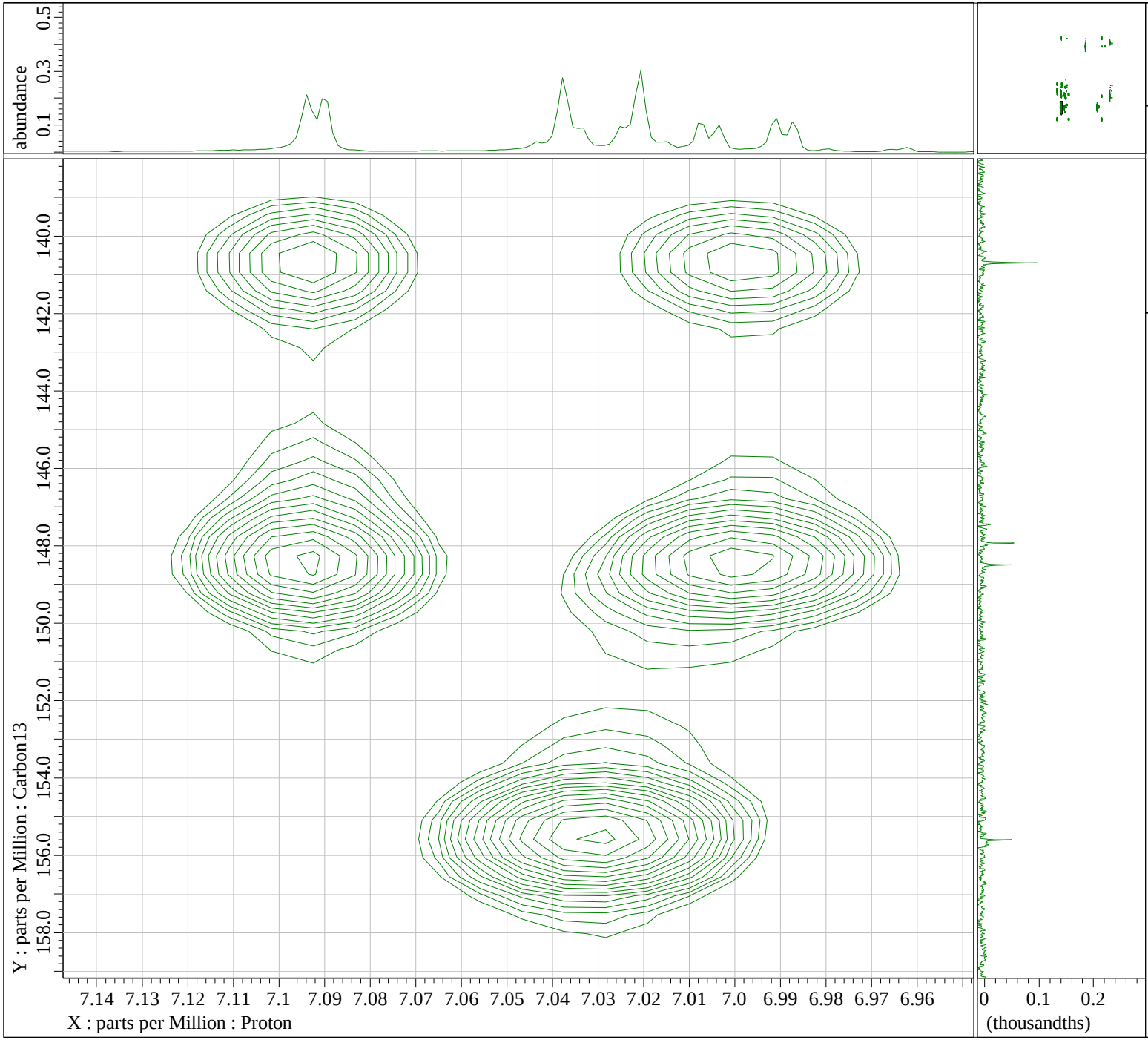

```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



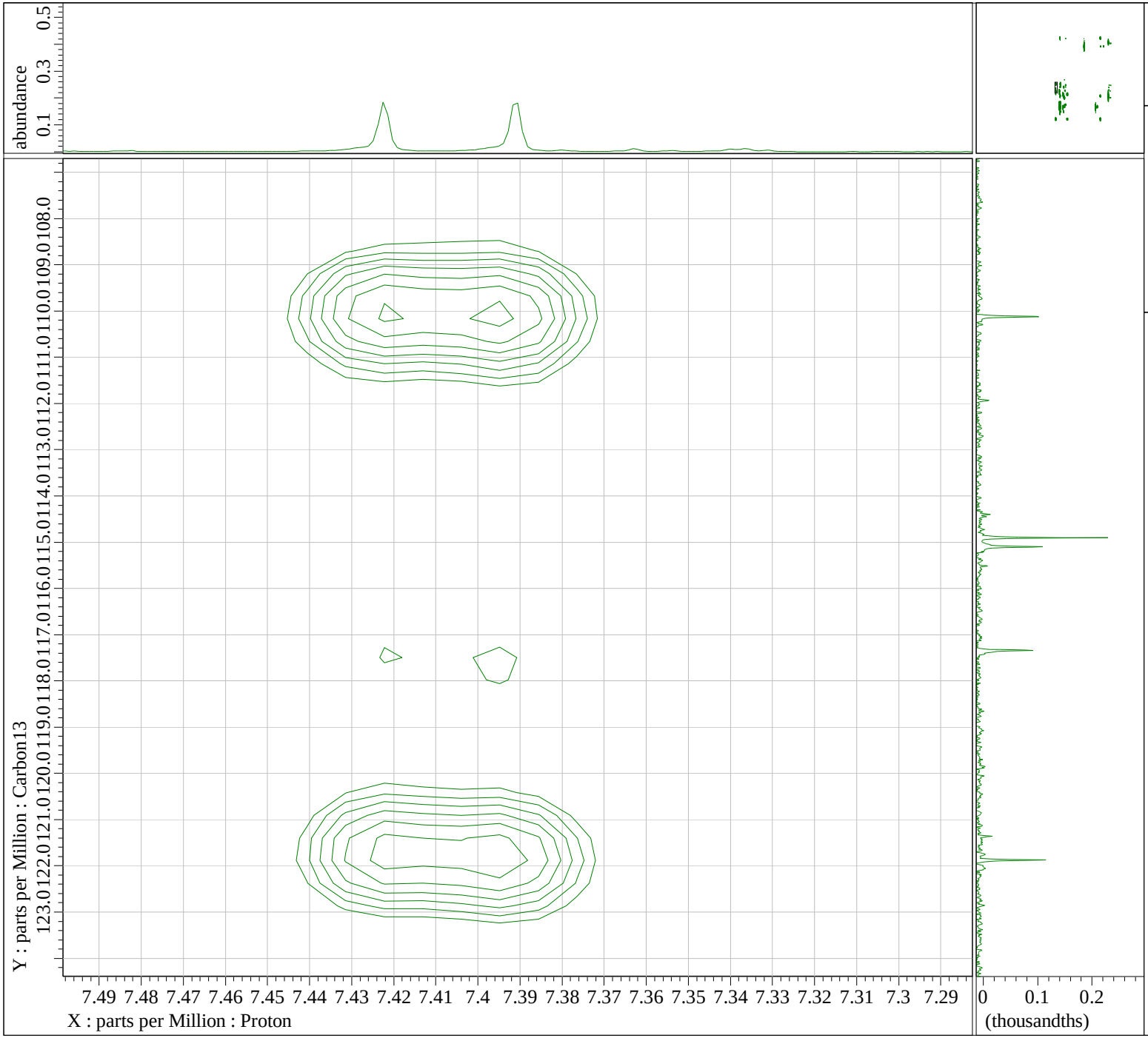

```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]




```
---- PROCESSING PARAMETERS ----
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1 )
fft( 1, TRUE, TRUE )
machinephase
ppm
```

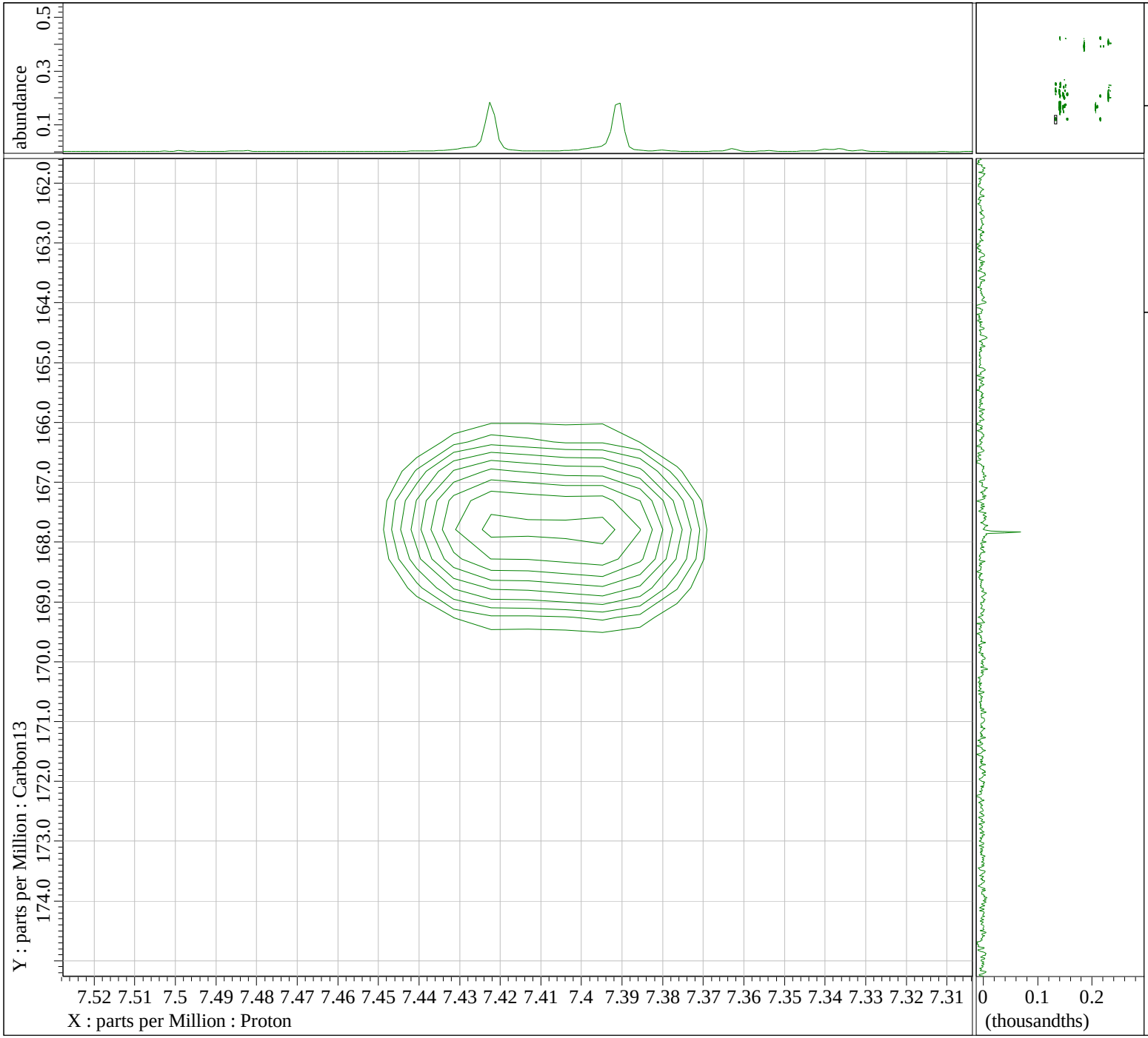
Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



JEOL

```
---- PROCESSING PARAMETERS ----
gauss( 5.0[Hz], 0.0[s] )
sinbell_auto
zerofill( 1 )
fft( 1, TRUE, TRUE )
ppm
[transpose]
sinbell4( -60, 160 )
trapezoid( 0[%], 5[%], 80[%], 100[%] )
zerofill( 2 )
fft( 1, TRUE, TRUE )
ppm
abs
```

Filename	= 62848-BR-F3.7_HMBC-1-
Author	= delta
Experiment	= hmbc.jxp
Sample_Id	= 62848-BR-F3.7
Solvent	= METHANOL-D4
Actual_Start_Time	= 31-OCT-2022 11:48:30
Revision_Time	= 1-NOV-2022 08:25:45
Comment	= gradient enhanced HMB
Data_Format	= 2D REAL REAL
Dim_Size	= 1638, 512
X_Domain	= Proton
Y_Domain	= Carbon13
Dim_Title	= Proton Carbon13
Dim_Units	= [ppm] [ppm]
Dimensions	= X Y
Spectrometer	= JNM-ECZ500R/S1
Field_Strength	= 11.7473579[T] (500[MH
X_Acq_Duration	= 0.21823488[s]
X_Domain	= Proton
X_Freq	= 500.15991521[MHz]
X_Offset	= 7.0[ppm]
X_Points	= 2048
X_Prescans	= 4
X_Resolution	= 4.58221894[Hz]
X_Sweep	= 9.38438438[kHz]
X_Sweep_Clipped	= 7.50750751[kHz]
Y_Domain	= Carbon13
Y_Freq	= 125.76529768[MHz]
Y_Offset	= 100[ppm]
Y_Points	= 256
Y_Prescans	= 0
Y_Resolution	= 122.83805031[Hz]
Y_Sweep	= 31.44654088[kHz]
Tri_Domain	= Proton
Tri_Freq	= 500.15991521[MHz]
Tri_Offset	= 5.0[ppm]
Blanking	= 2[us]
Clipped	= TRUE
Scans	= 32
Total_Scans	= 8192
Relaxation_Delay	= 1.5[s]
Recvr_Gain	= 76
Temp_Get	= 19.8[dC]
X_Acq_Time	= 0.21823488[s]
X_Atn	= 8.9[dB]



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