

University of Cambridge

Chemistry Department

UK NMR Managers meeting

24 June 2016

NMR

- 13 Machines in basement corridor
- Run by:
 - Peter Grice
 - Duncan Howe
 - Andrew Mason

Research NMR Machines – Selection Chart

	Open-Access		Trained user operated			Service only		Specialist users	
Machine Location ⇒ Computer name	Glaxo 400 B18 <i>laphroaig</i>	QNP 400 B25 <i>lagavulin</i>	DRX 400 B13 <i>florence</i>	BB 500 B19 <i>glengrant</i>	TCI 500 B19 <i>glenlivet</i>	Service 500 B28 <i>aberlour</i>	Service 400 B28 <i>cragganmore</i>	TXI 700 B14 <i>arran</i>	Solids 400s B17 <i>glenlossie/glenkinchie</i>
Sample changer ? ⇒	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Cryoprobe ? ⇒	No	No	No	No	Yes	Yes	Yes	Yes	No
Spectra needed ↓									
Routine 1H	✓	✓	✓	✓	✓✓✓	✓✓	✓✓	✓✓✓	✓
Non-routine 1H and 2D spectra	✓	✓	✓	✓	✓✓✓	✓✓	✓✓	✓✓✓	✓
13C	✓	✓	✓	✓	✓✓	✓✓✓	✓✓	x	✓
19F	✓	✓	✓	✓	x	x	✓✓✓	x	✓
31P	✓	✓	✓	✓	x	x	✓✓✓	x	✓
Other nuclei	✓	✓	✓	✓✓	x	x	x	x	✓
VT work	x	x	✓	✓✓✓	x	x	x	x	✓✓
Biological nmr	x	x	x	✓✓	✓✓✓	x	x	✓✓✓	x
Solid or bead samples	x	x	✓✓	x	x	x	x	x	✓✓

✓✓✓

best machine for the job – best quality / highest sensitivity

✓✓

will produce high quality spectra on all but most dilute samples

✓

good for routine spectra on reasonably concentrated samples (20~30mg of sample with formula weight 200~500)

x

instrument will not record these spectra

Both current and archive data on all spectrometers may be accessed via: <smb://scapa.ch.cam.ac.uk>

NMR

- Open-Access Machines, B18 and B25

These machines were upgraded 2 years ago and are now able to record ^1H , ^{13}C , ^{19}F , ^{31}P and a variety of other nuclei

Laphroig (B18) will have a more restricted list of available experiments to allow for fastest turnaround of routine experiments

Capabilities will evolve over time

NMR

- Open-Access Machines, B18 and B25
By default, data will not be printed

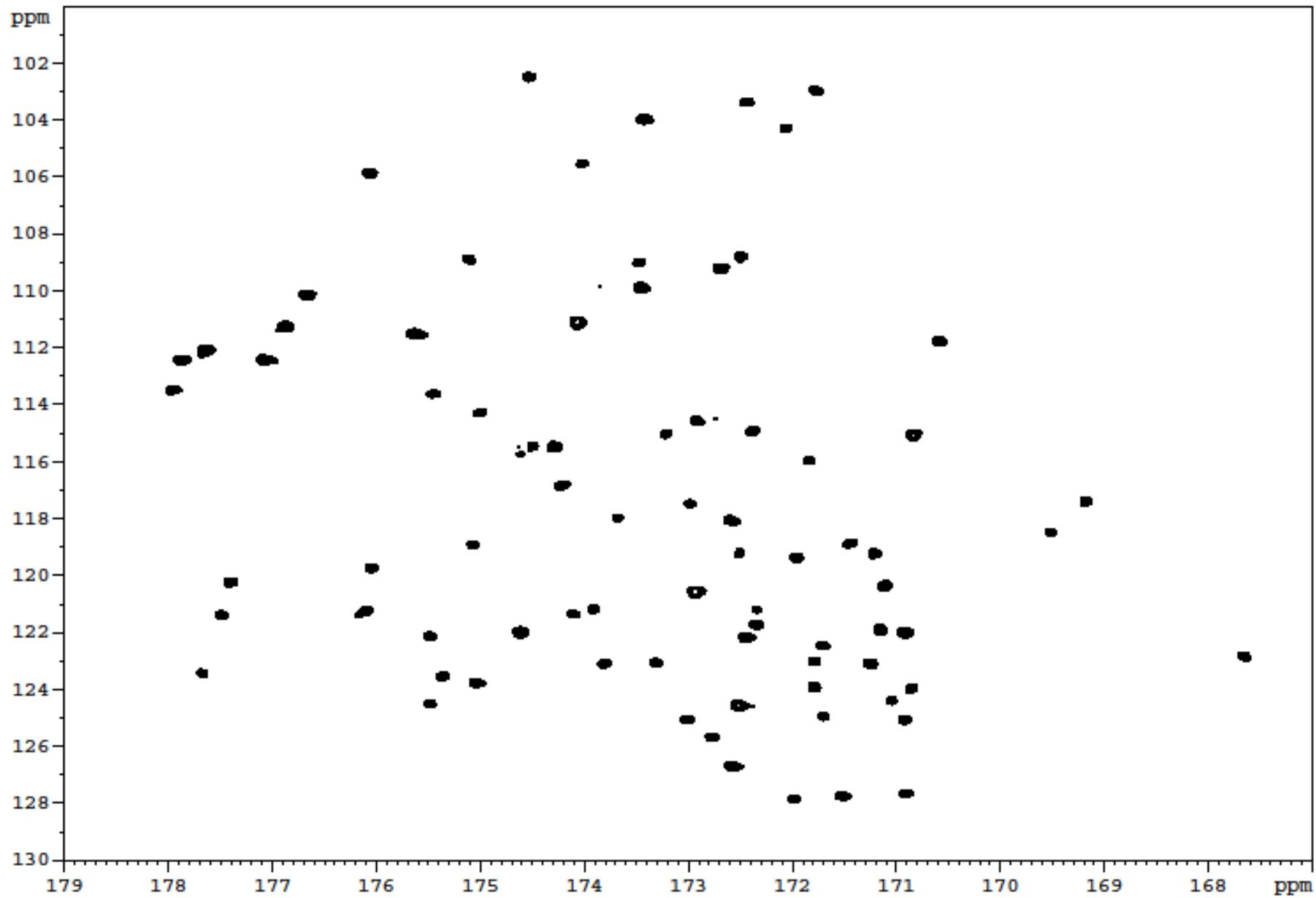
You will be able to print when you collect your sample

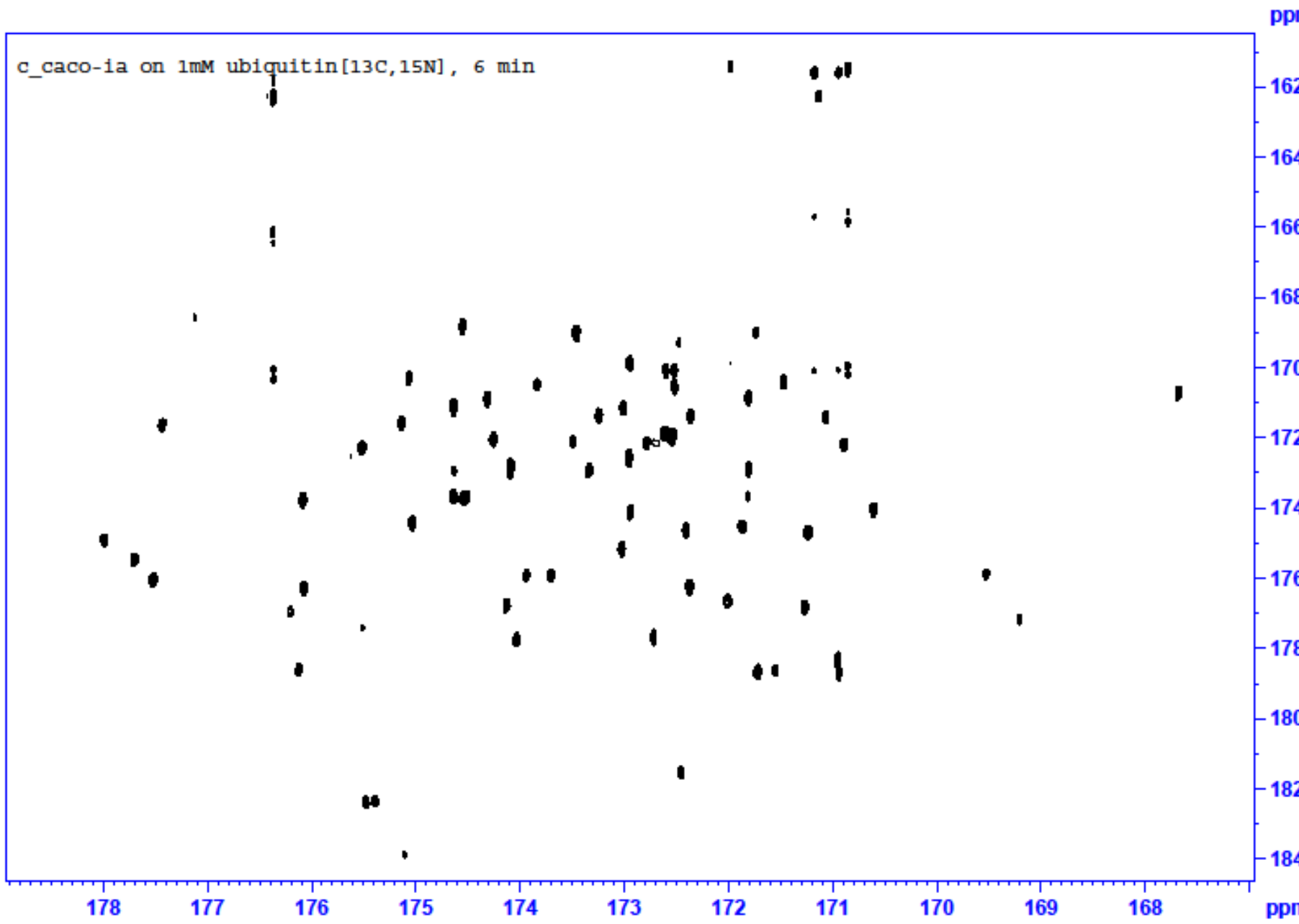
You can have data e-mailed to you automatically

NMR

- Trained User Operated Machines
 - Arran, AVANCE 700MHz, TXO Cryoprobe
 - 1H sensitivity not as high as TXI probe but not degraded by increasing salt concentration.

Used for protein samples *via* ^{13}C and ^{15}N observe experiments





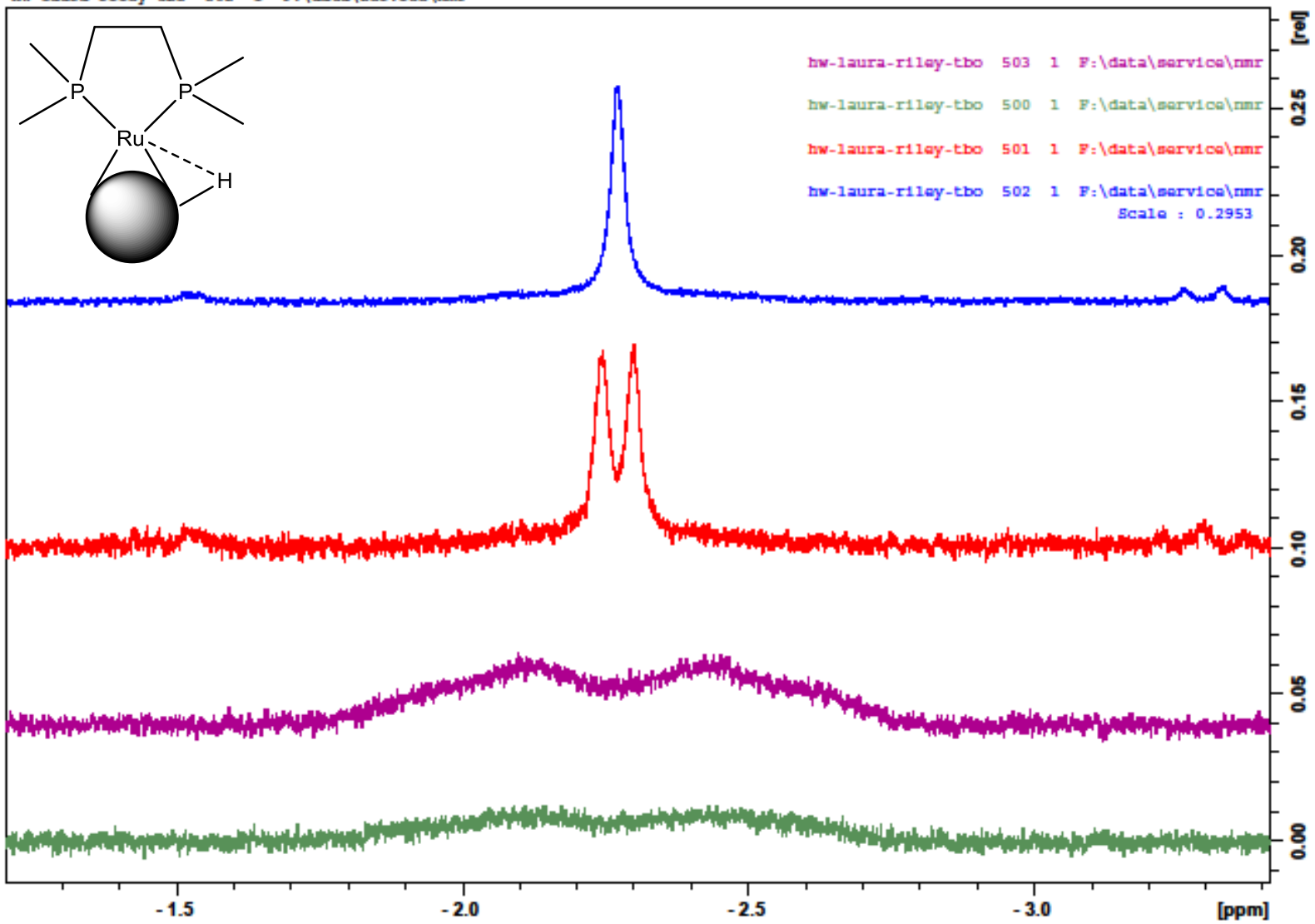
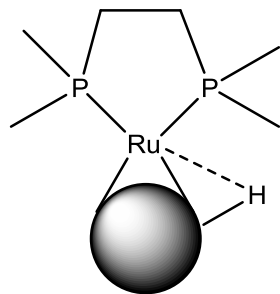
NMR

- Trained User Operated Machines
 - Glengrant, 500MHz, Room B19, Smart Probe, AVANCE III HD, 3-channel, BCU-II

Also has TBO probe

Main machine for VT work, -60C ~ 120C

hw-laura-riley-tbo 502 1 F:\data\service\nmr



NMR

- NMR Service, Room B28

Aberlour: 500MHz, DCH Cryoprobe

1H and 13C

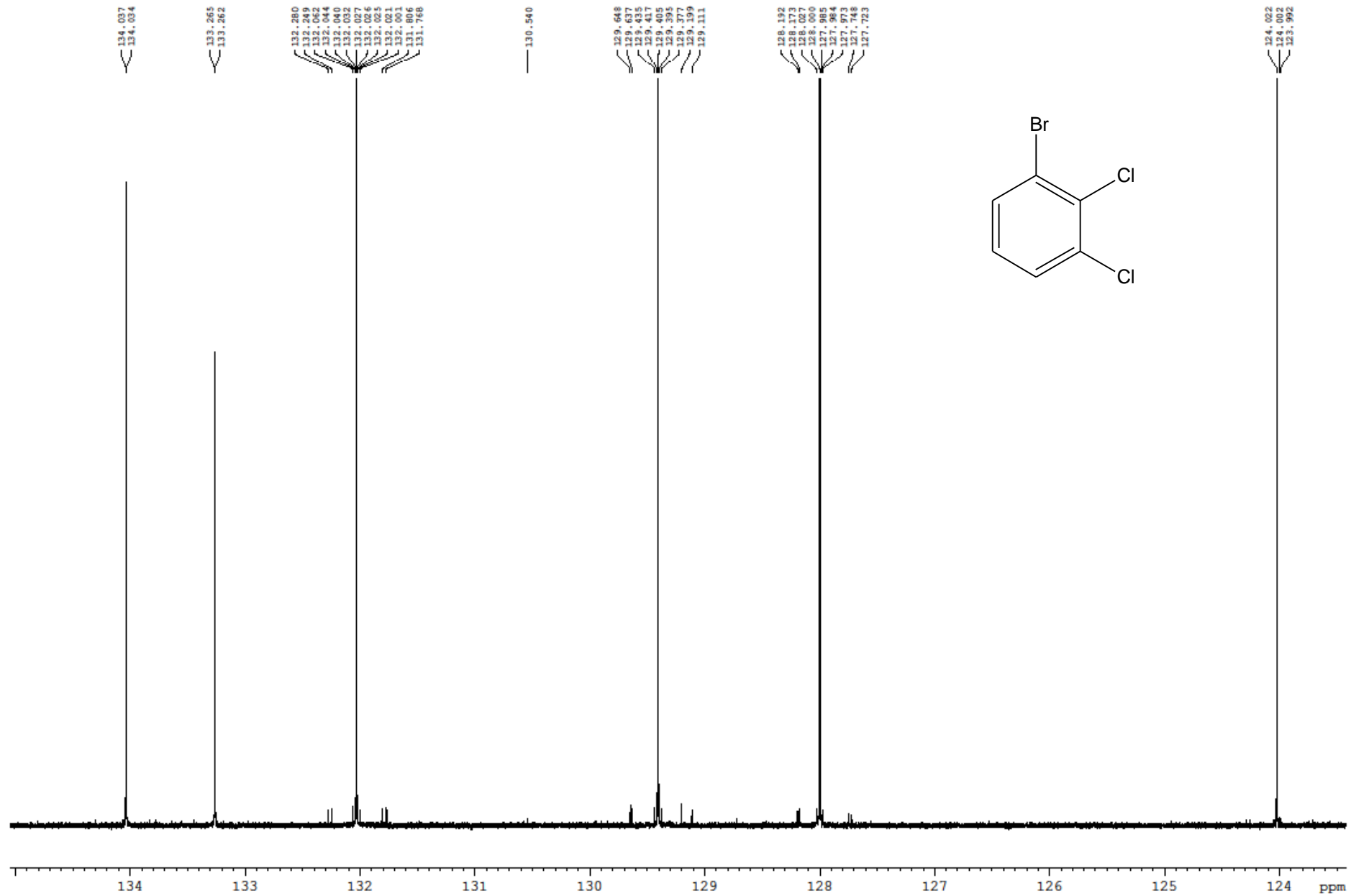
Our most sensitive instrument for 13C

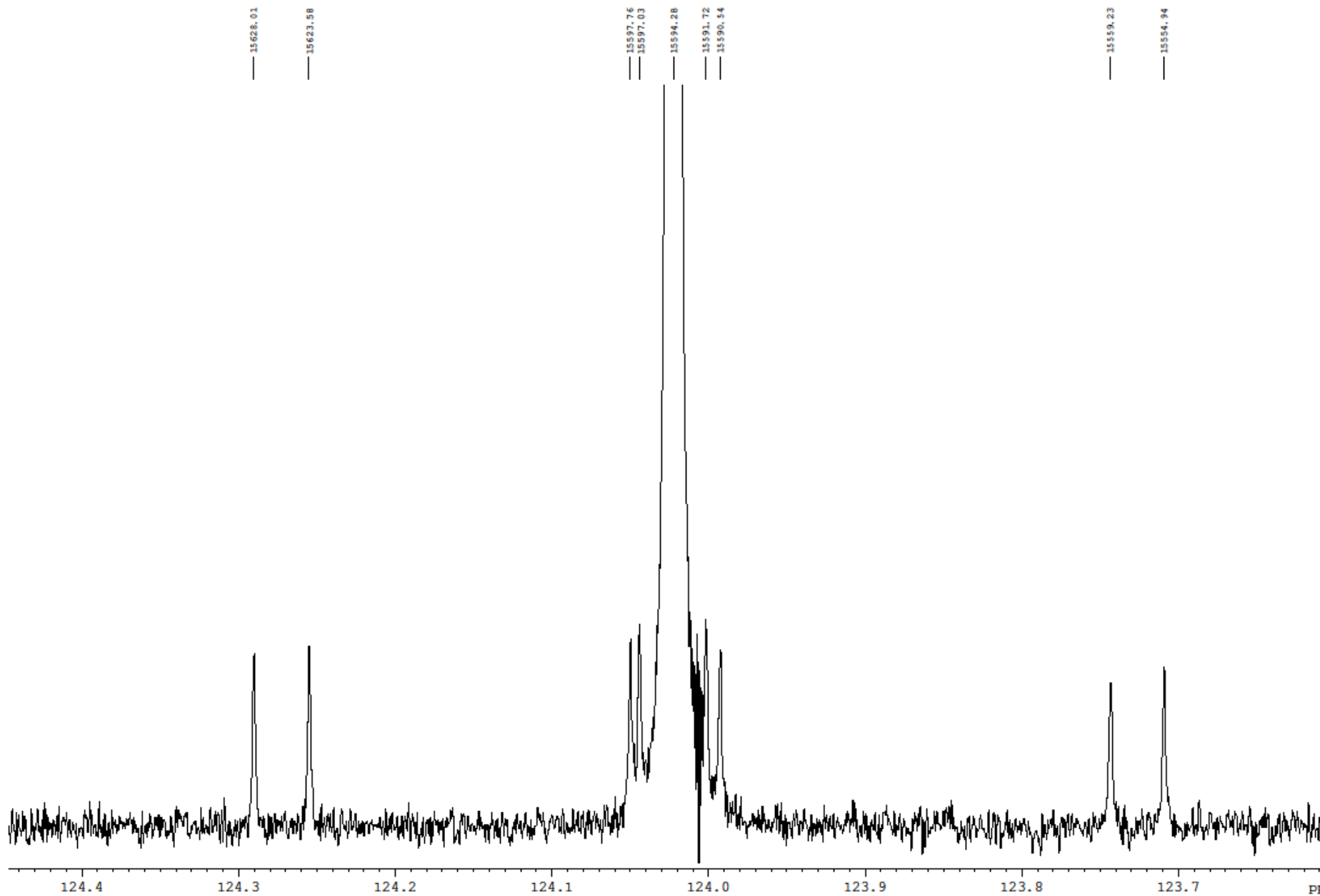
Temperature range 0~135C **

1- and 2-D spectra

*** temperature sensor in Cryoplatform***

*** may not agree with VT unit!***





NMR

- WEB SITE
 - <http://www.ch.cam.ac.uk/analytical/nmr>
 - how to access your data
 - tips and tricks
 - software for PC and Mac
 - coming soon, Open Access Data
 - maybe ... electronic sample submission