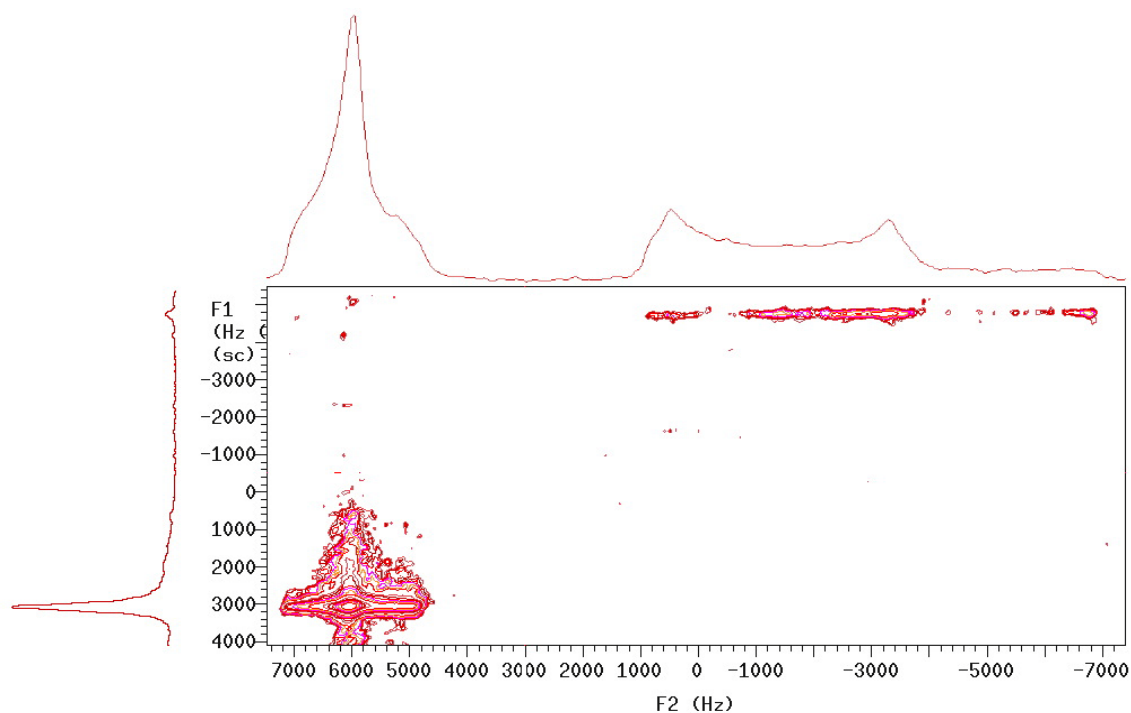


Varian Unity Inova 600

- 5 mm HX liquids probe with Z-gradient
- 5 mm HCN liquids probe with Z-gradient
- 3.2 mm H(F)X MAS probe
- 3.2 mm H(F)XY MAS probe
- 5.0 mm H(F)X MAS probe
- low gamma accessory (for MAS probes)
- 3 RF channels (plus deuterium lock)

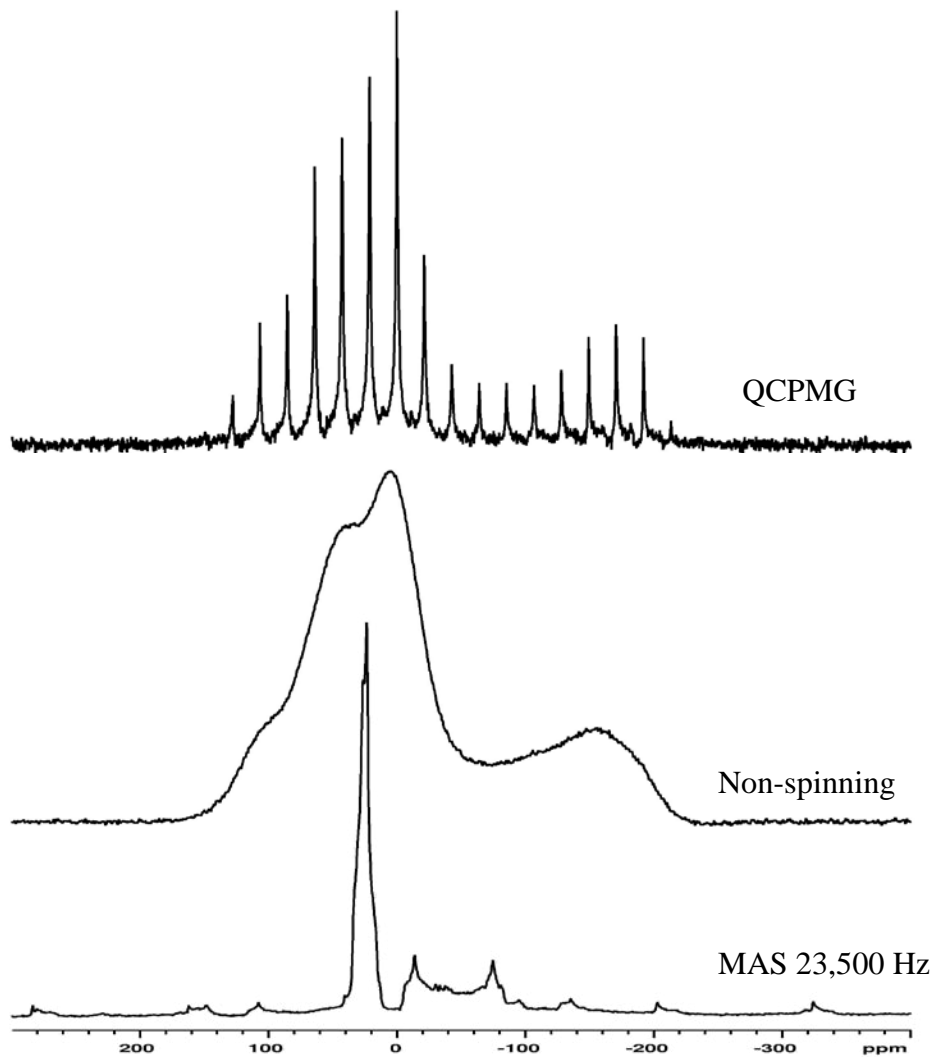
^{87}Rb 3Q-MAS of rubidium sulfate



The multiple quantum magic-angle spinning experiment was devised in the mid 90's by Lucio Frydman¹ as a method of obtaining high-resolution spectra of half-integer quadrupoles. In the directly detected dimension (F2) a skyline projection reveals a typical MAS spectrum, while in the indirect dimension (F1) an isotropic spectrum, free of any broadening due to the quadrupolar interaction is obtained.

¹ L. Frydman, J. Harwood, *J. Am. Chem. Soc.*, **1995**, 117, 19, 5368-5369, A. Medek, J.S. Harwood, L. Frydman; *J. Am. Chem. Soc.*, **1995**, 117, 12779-12787

^{27}Al MAS spectrum of Andalusite



Andalusite (Al_2SiO_5) contains two inequivalent aluminum sites; one is in a relatively symmetric nearly-octahedral environment, while the other is 5 co-ordinate and of lower symmetry.

In the NMR spectrum the difference in the relative environments of the two nuclei is reflected in the very different quadrupolar coupling constants, C_Q 's.