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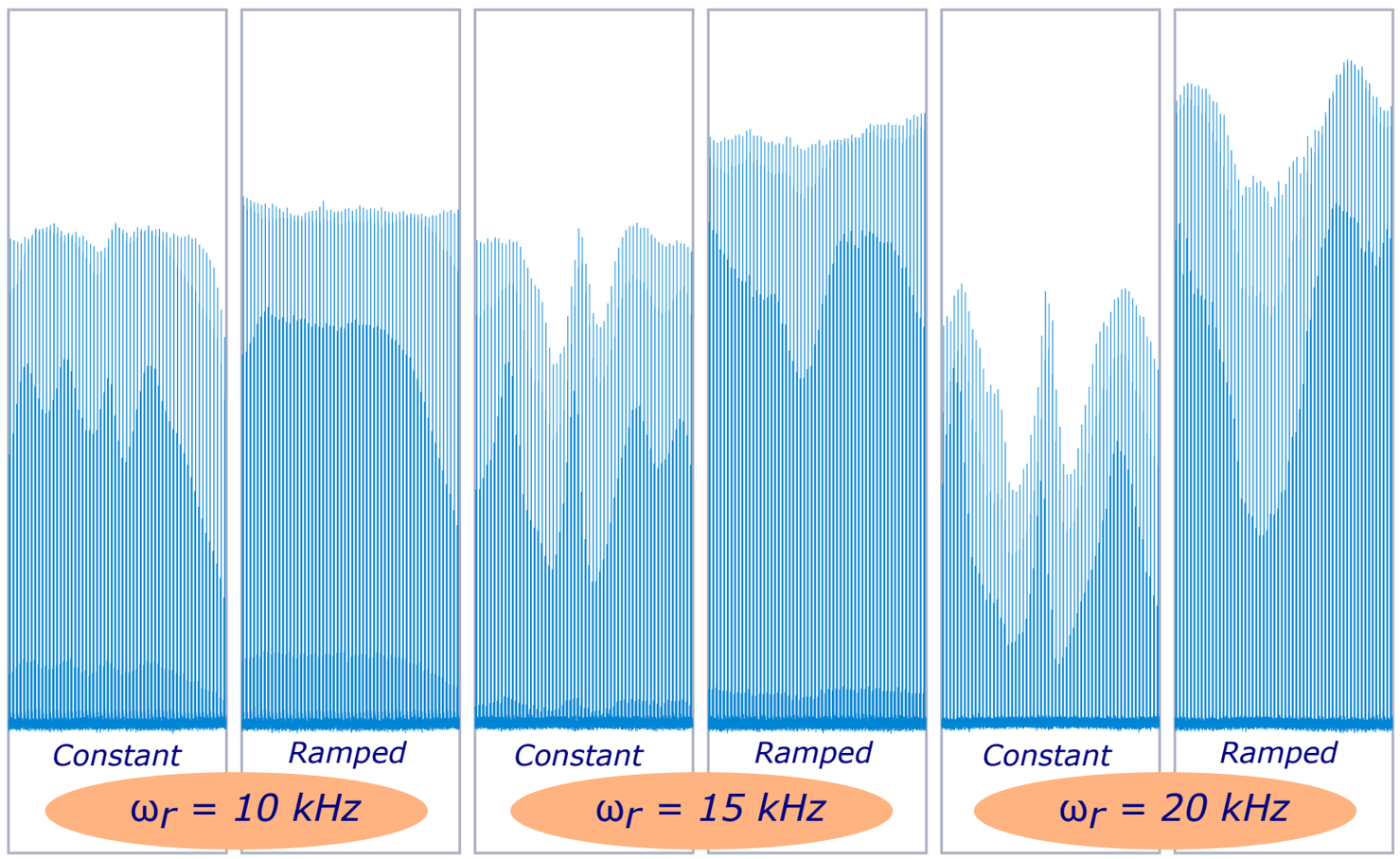
NMR is Art



U-C^{13}, N^{15}-glutamine in a 1.6 mm Agilent FastMAS probe

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Field strength: 600 MHz

Why is this your favorite spectrum?

This is a plot of arrayed solid-state CP (cross polarization) spectra of uniformly labeled glutamine at three magic angle spinning speeds. Against a 133 kHz C^{13} RF field, the H^{1} was arrayed, either at constant amplitudes or with a linear 26 kHz ramp. The result resembles panels of Chinese landscape ink paintings. CP matching sidebands can clearly be located and compared with predicted values, especially in the carbonyl region which forms darkened middle ridges. In the distance, the aliphatic region depicts faint, elevated peaks and plateaus, sometimes lofty and mystical. The low ridges in the foreground arise from the magic angle spinning sidebands from carbonyls, which has large CSA, and gradually vanish as the spinning speed increases. The ramped CP spectra demonstrate the benefit in sensitivity enhancement, especially at higher speed. Overall, it is a good demonstration of the principles of magic angle spinning and cross polarization.