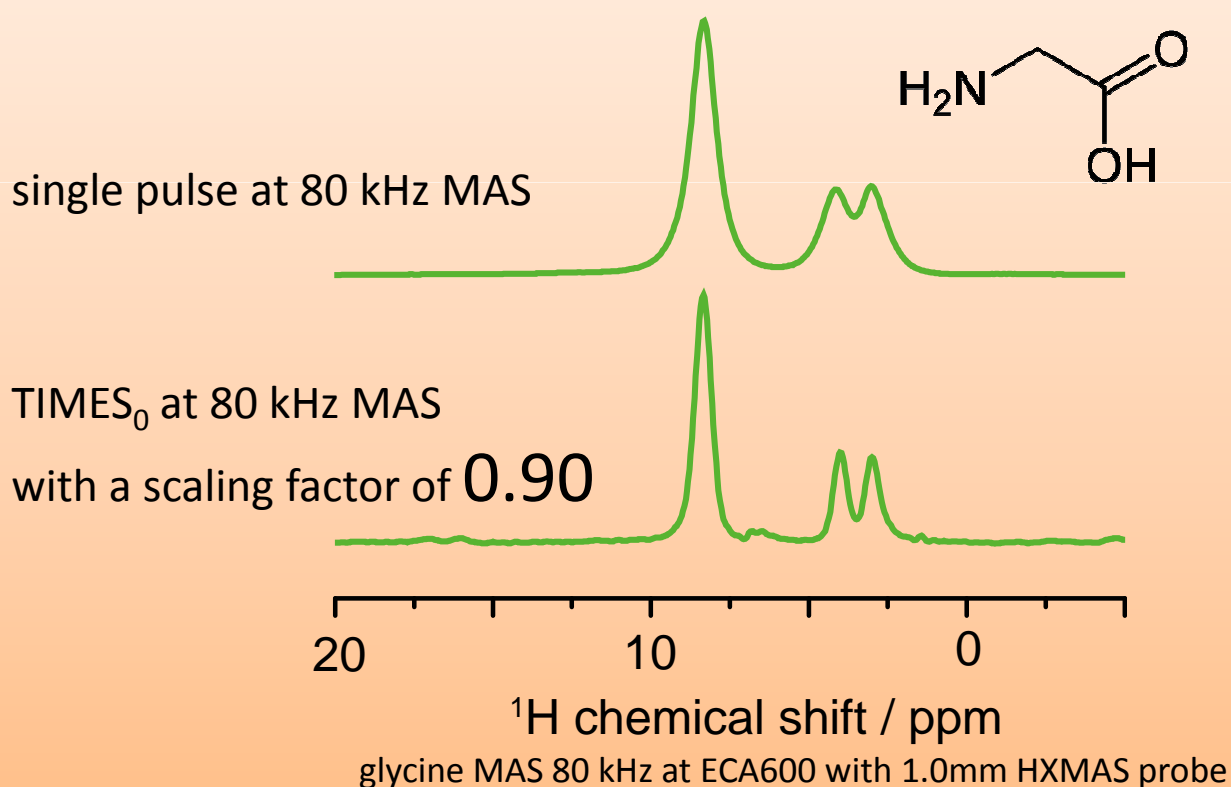


CRAMPS at very fast MAS: high resolution ^1H NMR of solid sample

This note introduces a new CRAMPS (combined rotation and multiple pulse spectroscopy) method to enhance the resolution in ^1H NMR of solid sample. The very fast MAS up to 80 kHz by a 1 mm MAS system, which we recently released, reduces the effect of ^1H - ^1H homonuclear dipolar interaction. Although this leads to sensitivity and resolution enhancement in ^1H NMR, ^1H - ^1H dipolar interaction still gives significant effect on ^1H linewidth even at 80 kHz MAS. Here we introduce new CRAMPS method, named TIMES_0 , to achieve sensitivity boost at very fast MAS. Although the CRAMPS inevitably introduces scaling of the spectra with a scaling factor, TIMES_0 gives a very large scaling factor of 0.90. TIMES_0 realize high resolution ^1H NMR spectra with avoiding harmful effects due to spectral scaling.



Y. Nishiyama, X. Lu, J. Trebosc, O. Lafon, Z. Gan, P.K. Madhu, J.-P. Amoureux, J. Magn. Reson. 214 (2012) 151-158.