Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

SUPPORTING INFORMATION

Detection of remote proton-nitrogen correlations by ^{1}H-detected ^{14}N overtone solid-state NMR at fast MAS

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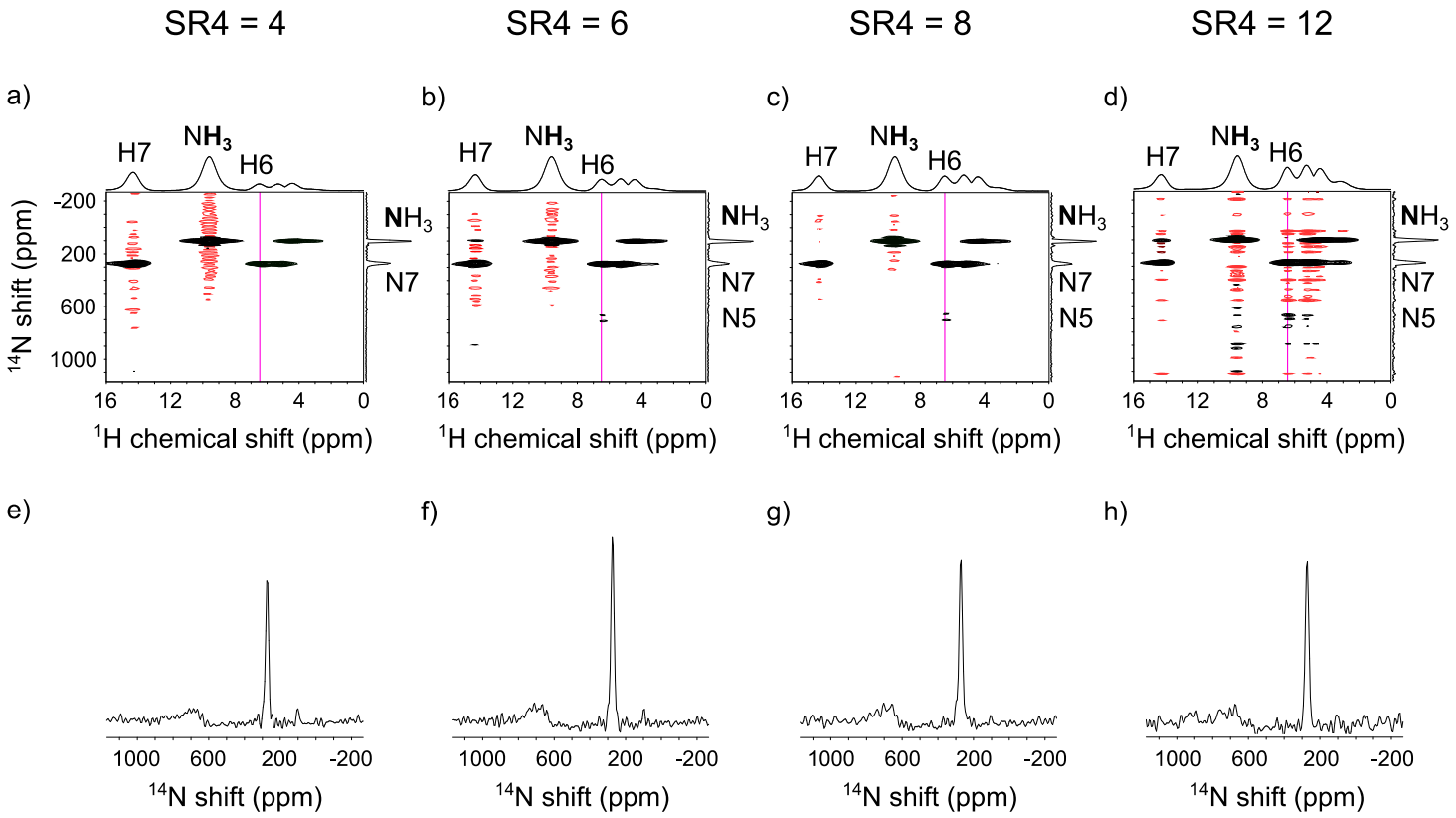

Figure S1. Hist-B: a-d) the 2D $^{1}H/^{14}N$ *D*-HMQC spectra and e-h) the extracted ^{14}N slices at ^{1}H chemical shift of 6.5 ppm (H6, vertical lines in a-d)). These spectra were acquired at τ_{mix} of 0.768 ms (4 loops of SR4), 1.152 ms (6 loops of SR4), 1.536 ms (8 loops of SR4), and 2.304 ms (12 loops of SR4) (from left to right). The other experimental conditions were the same as those in Fig. 2a except the number of scans were 24 for a-c and 128 for d. The positive contour signals are presented in black while the negative ones are presented in red.

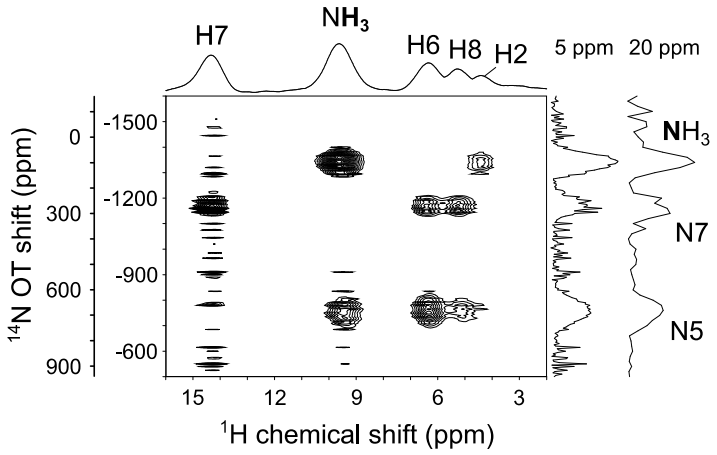

Figure S2. Hist-B: the 2D ^{1}H-^{14}N OT correlation map. The experimental conditions are identical to those in Fig. 3a except the ^{14}N OT shift increment step of 5 ppm. On the far right is the skyline projection of ^{14}N OT shift array with an increment step of 20 ppm from Fig. 3a for comparison. On the far left is the ^{14}N OT shift at the central band (n = 0).

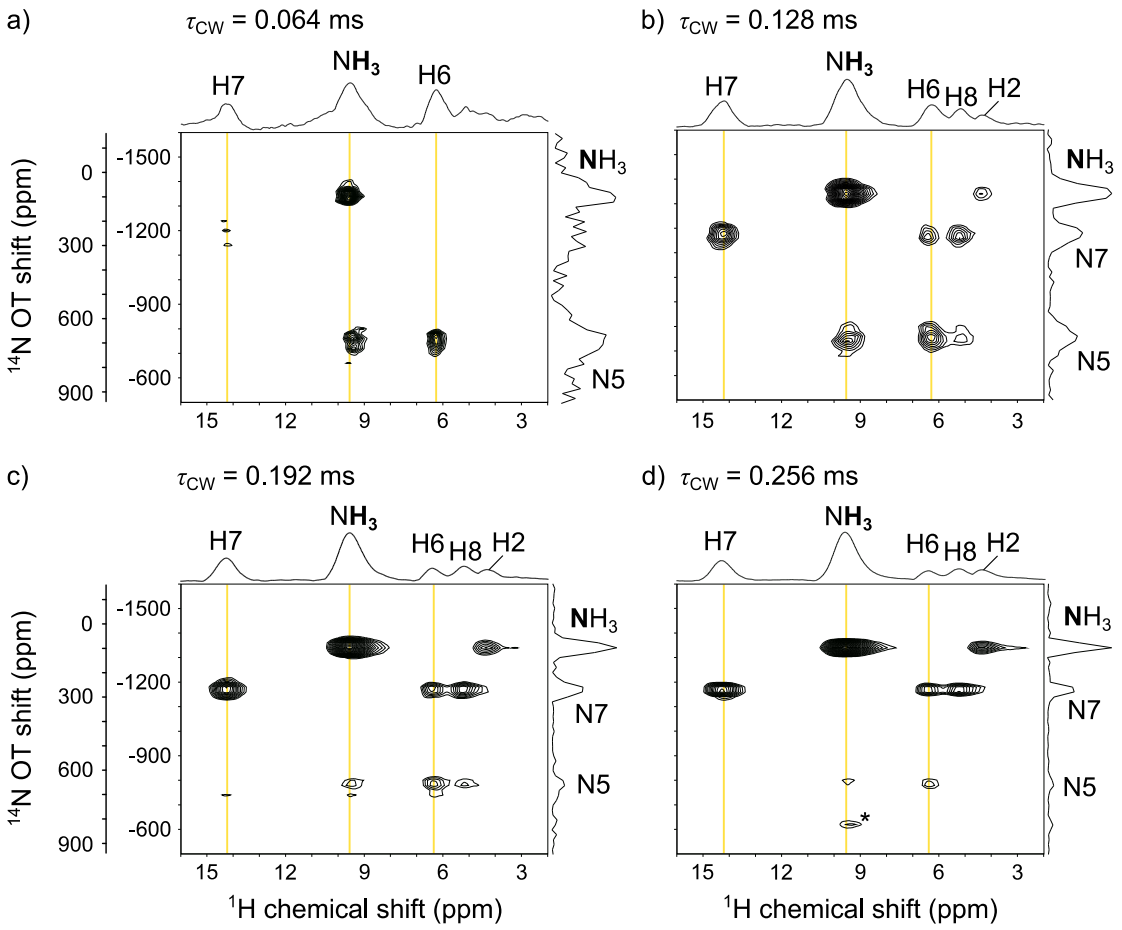

Figure S3. Hist-B: the 2D ^{1}H-^{14}N OT correlation maps at τ_{CW} of 0.064 ms (a), 0.128 ms (b), 0.192 ms (c), and 0.256 ms (d). For d), the * denotes a sideband of ^{14}**N**H$_3$ OT peak. Both S_0 and S' were alternatively obtained for each ^{14}N OT frequency. The other experimental conditions are identical to those in Fig. 3a. The vertical lines denote the ^{1}H chemical shift where ^{14}N OT shift arrays are extracted. On the far left is the ^{14}N OT shift at the central band (n = 0).

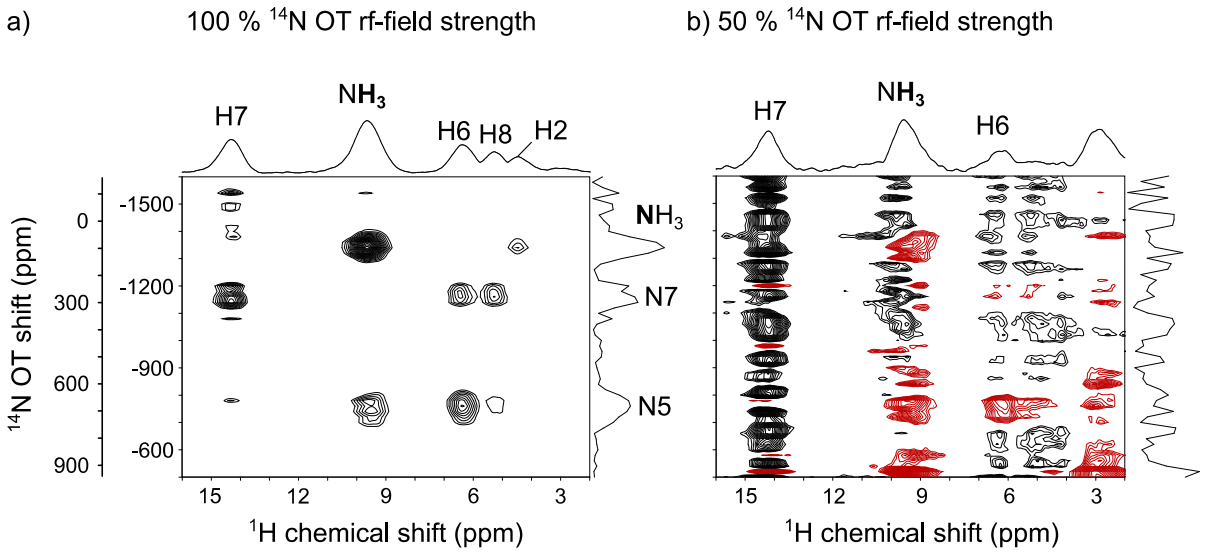

Figure S4. Hist-B: the 2D ^{1}H-^{14}N OT correlation maps with ^{14}N OT rf-field of a) full strength (100 %: 125 kHz) and b) half strength (50 %: 63 kHz). The other experimental conditions are identical to those in Fig. 3a. On the far left is the ^{14}N OT shift at the central band (n = 0).