

# A Theoretical Application of MAXY NMR for $CD_n$ Groups

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Liquid-state NMR experiments including edited-pulse angles are widely used to distinguish protonated and deuterated carbonyl groups in complex molecules. One of them is maximum quantum correlation NMR spectroscopy (MAXY NMR), which is very suitable to separate  $CH_n$  groups. The product operator theory is used for the analytical description of these experiments for weakly coupled spin systems. In this study, the MAXY NMR experiment is applied for weakly coupled  $IS_n$  ( $I = 1/2$ ;  $S = 1$ ;  $n = 1, 2, 3$ ) spin systems using the product operator theory. A theoretical discussion and experimental suggestions for sub-spectral editing of  $CD_n$  groups are also presented.

*Key words:* MAXY NMR; Product Operator Theory; Spin-1.