

Application of non-uniform sampling method in NMR spectroscopy

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To harness the resolving power of high-field NMR spectroscopy, non-uniform sampling (NUS) methods and efficient data reconstruction methods are absolutely required to obtain NMR spectra at otherwise unreachable spectral resolution in indirect dimensions. I will describe necessity of NUS methods in high-field NMR spectroscopy and my experience using the methods developed by Wagner laboratory at Harvard Medical School [Hyberts, et al., 2011; Hyberts, et al., 2012.]. These important methods include the Poisson-gap sampling method, the Forward Maximum entropy (FM) reconstruction method [Hyberts et al., 2012], and the iterative soft thresholding (IST) method [Hyberts et al., 2011]. These methods will be used to record and reconstruct all demanding 3D or 4D experiments.

References

Hyberts S. G., Milbradt A. B., Wagner A. B., Arthanari H., Wagner G. (2011). Application of iterative soft thresholding for fast reconstruction of NMR data non-uniformly sampled with multidimensional Poisson Gap Scheduling. *J. Biomol. NMR* 52, 315-327.

Hyberts S. G., Arthanari H. and Wagner G. (2012). Applications of non-uniform sampling and processing. *Top. Curr. Chem.* 316, 125-148.

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