

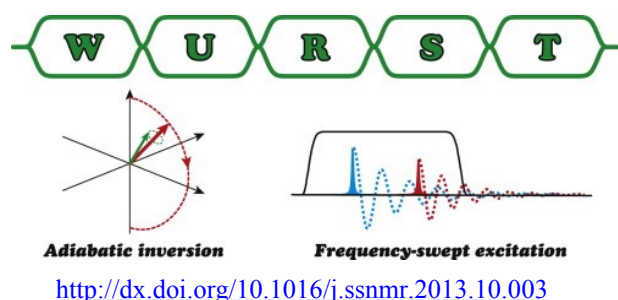
The nuts and bolts of running nuclear magnetic resonance (NMR) experiments

Studentský projekt

vedoucí: RNDr. Oleg Petrov, KFNT, MFF UK, Troja, Kryopavilion, C138,
tel. +420221912561, e-mail: oleg.petrov@matfyz.cuni.cz

You can help our NMR laboratory set up a new NMR experiment based on excitation and refocusing of magnetization over a broad range of frequencies (up to 1 MHz). This approach is known as WURST pulses (**W**ideband, **U**niform **R**ate, **S**mooth **T**runcation) and aims to address the sensitivity limitation of magnetic resonance techniques. Details can be found at <http://dx.doi.org/10.1016/j.ssnmr.2013.10.003>. The result of this project, should it be successful, will be employed in our regular research on zeolite catalysts.

NMR is a method of spectroscopy that probes chemical environment and dynamic properties of spin-bearing atoms such as ^1H , ^7Li , ^{13}C , ^{14}N , ^{19}F , ^{23}Na , ^{27}Al , ^{29}Si , ^{31}P , ^{35}Cl , ^{129}Xe , in molecules or crystals. Setting up a new NMR experiments implies writing a proper pulse program and perhaps a processing routine for recorded signals. We expect the student to be curious about the practical aspects of NMR spectroscopy but also about signal processing in general, eager to learn and to adapt quickly to the needs and priorities of our NMR group should he or she be willing to stay with us any longer (e.g. for a bachelor thesis).



Nukleární magnetická rezonance na KFNT MFF UK

