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Review HW#4

digital filters: any negatives?

won't see anything outside spectral region

open up SW: won't hurt s/n, but probe and rf have limitations

Bruker smiles

NOEs and decoupling / coupling

how useful might coupling be? occasional

Maik Tretbar example

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In-Lab exam next week

-- schedule with Heike or Zhihui during lab session this week

s/n ∝ c

NOE, quantitation, coupling

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$$s/n \propto c \cdot \gamma_{ext} \cdot \gamma_{obs}^{3/2} \cdot B_0^{3/2} \cdot \sqrt{t} \; / \; T$$ (Claridge section 4.4)

s/n = signal to noise

c = concentration of nuclei (including nat. abundance)

γ_{ext} = magnetogyric ratio of excitation nucleus

γ_{obs} = magnetogyric ratio of observed nucleus

B_0 = magnetic field strength

t = time of experiment, usually $\propto$ NS

signal $\propto$ t

noise $\propto \sqrt{t}$

s/n $\propto$ signal / noise = $t/\sqrt{t} = \sqrt{t}$

T = temperature (K)