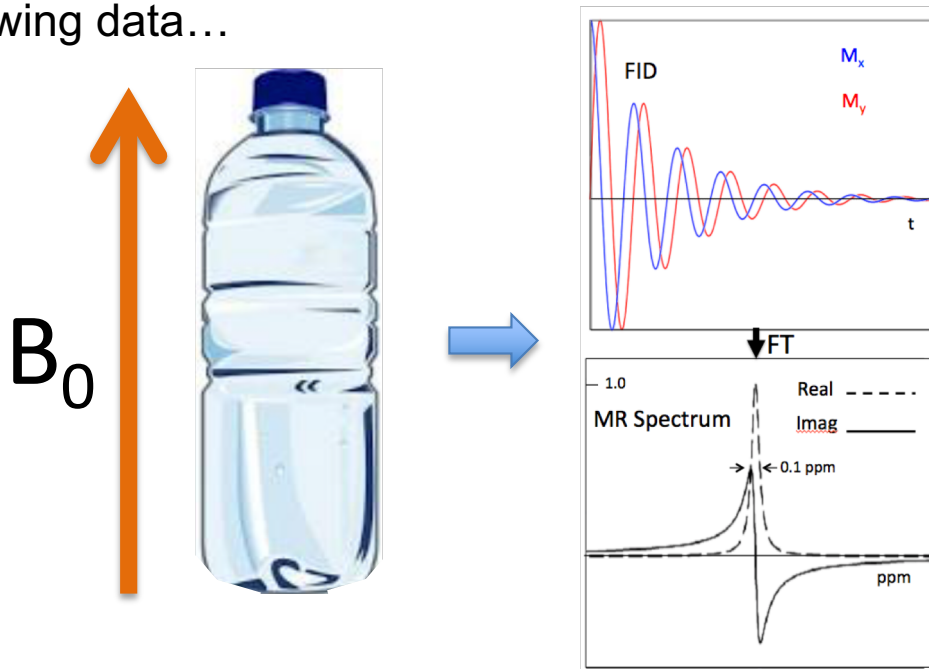D. Spielman
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Problem Set #9
Rad 226a

Problem 1. Bottle flipping and inversion recovery

a) A student is first asked to collect a free induction decay (pulse sequence = 90º - acquire) from a bottle of water, and he/she generates the following data…


The student is then asked to acquire data using an inversion recovery sequence: 180º - 90º - acquire. However, instead of reprogramming the scanner to add a 180º inversion pulse, he/she decides to just physically flip the bottle immediately prior to collecting an FID (90º-acquire). Sketch the expected signal response and explain.

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Problem Set #9
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Problem 1. Bottle flipping and inversion recovery

b) An alternative solution is to rapid rotate B_0 from +z to –z as shown below. Does this work or is this the same as part (a)? If it does work, what would be the constraint on T in order to achieve a 180º inversion?

B_0

time

t=0

t=T
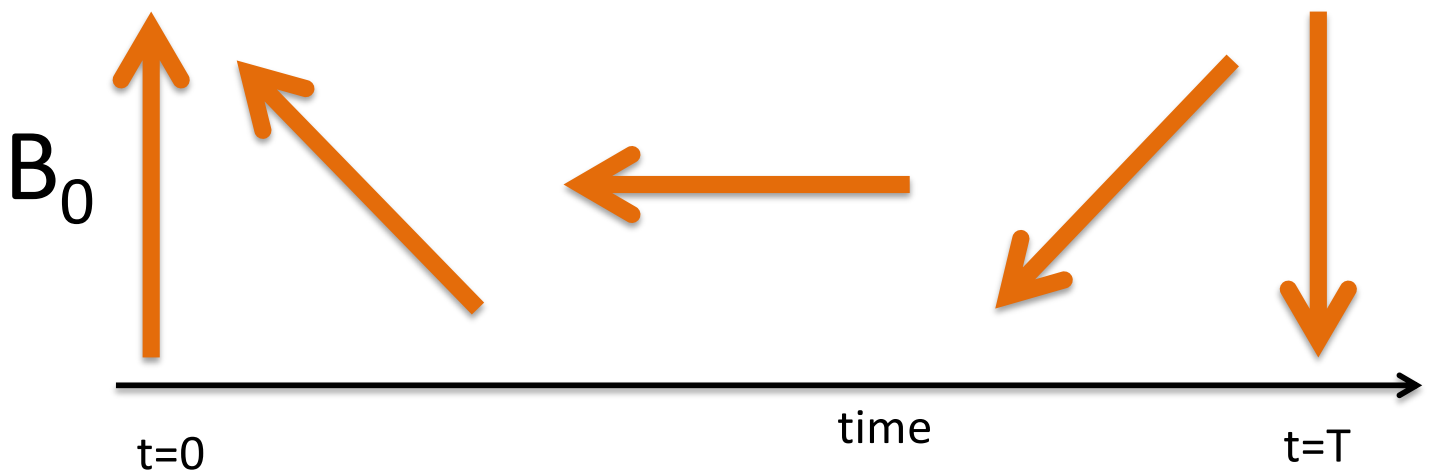
c) An third alternative solution is to rapid ramp B_0 down to through zero stopping at $-B_0$. Does this work? If it does work, what would be the constraint on T in order to achieve a 180º inversion?

B_0

time

t=0

t=T

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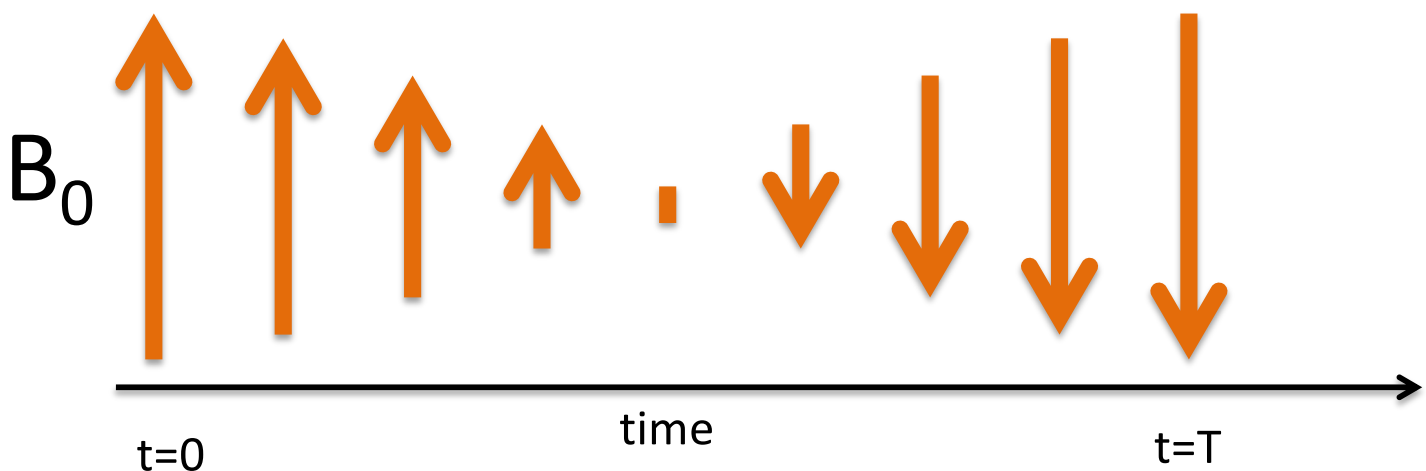
Problem Set #9
Rad 226a

Problem 2. Free Choice

Create your own problem and solution for any problem relevant to RAD226A.