HST.583 Functional Magnetic Resonance Imaging: Data Acquisition and Analysis
Fall 2008

Lab 4b questions.

Lab Question 6 : Draw the measured signal as a function of inversion time for each of the tissue compartments. Calculate the T1 for gray, white matter and CSF by fitting Eq. (1) to your data. Hint: you will need to use a nonlinear fitting function such as nlinfit in matlab to accomplish this.

Lab Question 7 : Draw the measured signal as a function of echo time for each of the tissue compartments. Calculate the T2 for gray, white matter and CSF by fitting Eq. (2) to your data.

Lab Question 8 : Draw the measured signal as a function of echo time for each of the tissue compartments. Calculate the T2* of gray and white matter and CSF by fitting Eq. (3) to your data.

Lab Question 9 : According to your measurements how do T2 and T2* compare for the same tissue compartment? Did you expect these findings? Explain why.

Lab Question 10: Estimate the distortion in frontal lobes by measuring distance on the scanner to some reference feature. Plot the distortion in mm as a function of effective esp.