Introduction and Overview

MR Physics for SPM

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Functional Imaging Laboratory
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UCL

Welcome!

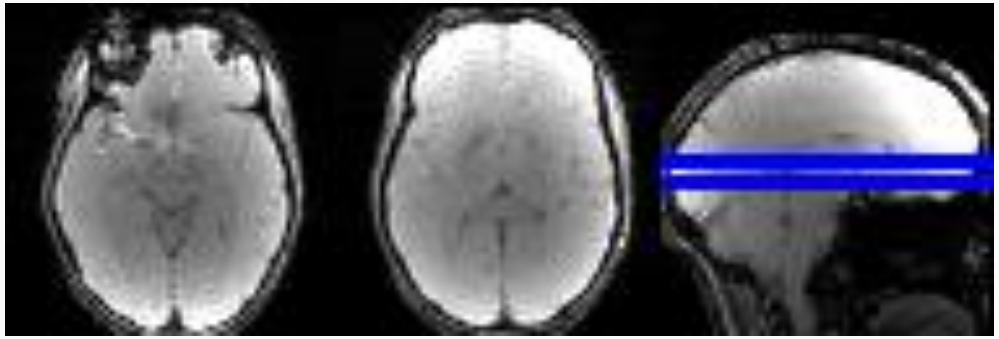
And housekeeping…

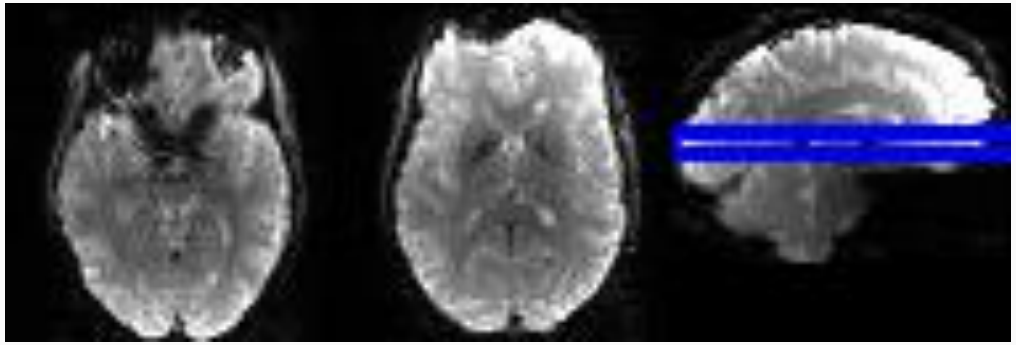
Learning Objectives

1. Gain the skills to engage knowledgably with MRI physicists about the key parameters of an (f)MRI protocol.
2. Interpret MRI acquisition details reported in the methods section of a research paper.
3. Explain the trade-offs between acquisition speed, spatial resolution, coverage, and sensitivity.
4. Identify common MRI artefacts and determine which can be addressed using SPM.

Approach

1. We have focussed on providing intuition – there will be some graphs and equations to help.
2. MRI is extremely flexible, but we are focusing on gradient echo imaging, which is governed by tissue properties such as water content (proton density, ρ) and relaxation behaviour (T_1, T_2*)
3. Help you understand the difference between these gradient echo images:





Faculty

Here to help, and all happy to answer your questions!