Computational MRI (COMP0121) Coursework 1 (Code List)

AUTHOR

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1. Problem 1
    (a) spin_excess.m, calculate spin excess
2. Problem 2
    (a) Problem2.m, main script for Problem 2.4
        i. forced_procession_rot.m, calculate forced procession in rotating frame
3. Problem 3
    (a) Problem3_1.m, main script for Problem 3.1
        i. forced_procession_lab.m, calculate forced procession in laboratory frame
    (b) Problem3_2.m, main script for Problem 3.2
        i. free_procession_euler.m, calculate free procession using Euler's method
    (c) Problem3_3.m, main script for Problem 3.3
    (d) Problem3_4.m, main script for Problem 3.4
    (e) Problem3_5.m, main script for Problem 3.5
4. Problem 4
    (a) Problem4_1.m, main script for Problem 4.1
    (b) Problem4_1.m, main script for Problem 4.2
5. Problem 5
    (a) Problem5_1.m, main script for Problem 5.1
        i. spin_echo_sequence.m, calculate spin echo signal
    (b) Problem5_2.m, main script for Problem 5.2

i. lorentizian_rand.m, generate random number with Lorentizian distribution, using Rejection method.

(c) Problem5_3.m, main script for Problem 5.4

6. Library

   (a) Tom Davis's arrow3 function was used for plot nice arrows in 3D space.

7. Utility functions

   (a) save_pdf.m, save figure to pdf

   (b) save_video.m, save figures to video

   (c) draw_frame.me, plot a frame of video

   (d) draw_vector.me, plot a vector with label

   (e) draw_axis.me, plot cartesian axis