Code Structure

Caleb Miller describing changes and updates to Minjie Fan's code.
All my files are located on github at (fairly compact): https://github.com/calebjmiller/Non_Gauss
Minjie's files (more spread out) on github too : https://github.com/minjay

Quick Notes on Structure

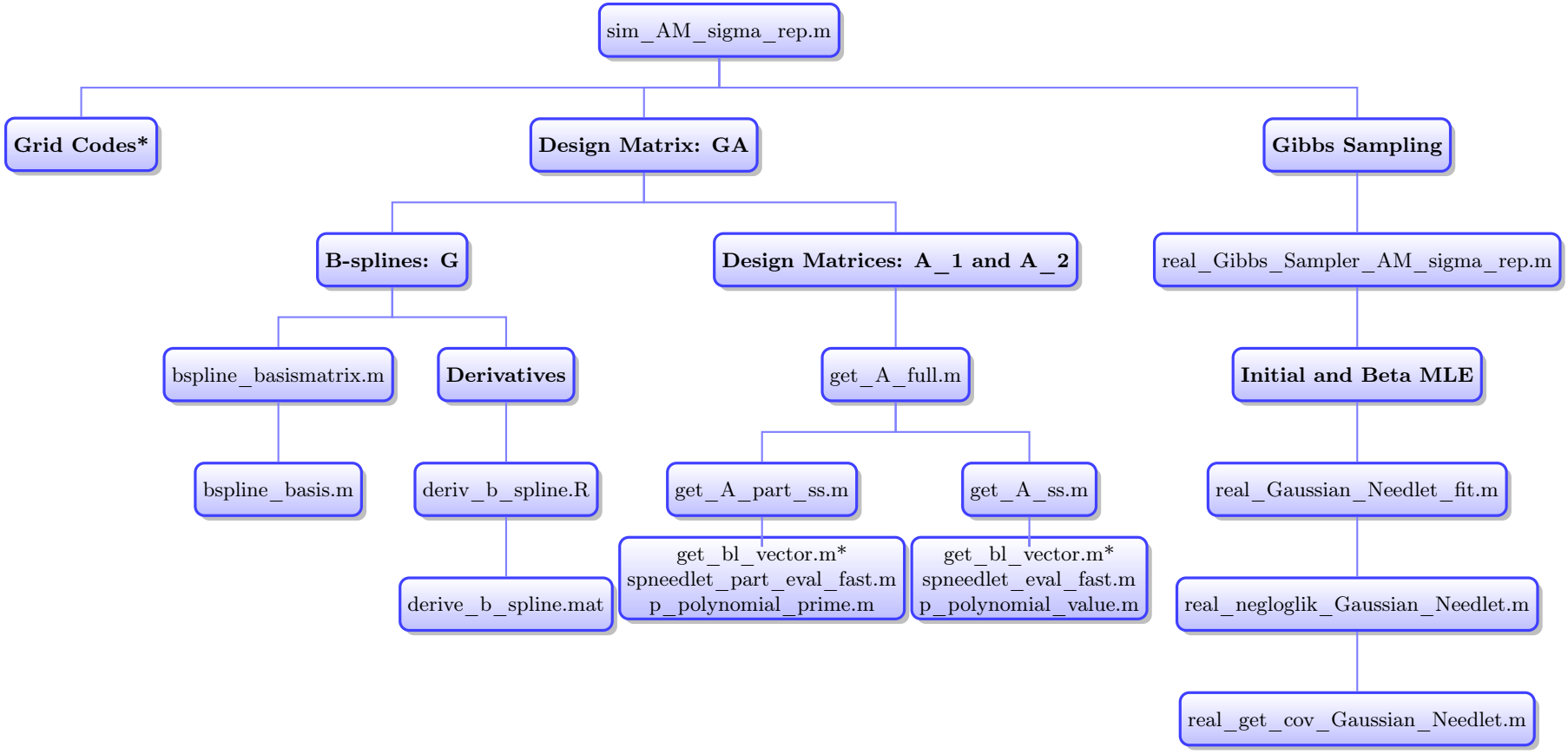
- Above the whole structure picture below is a batch which would run everything.
- There are different versions of the file at the top called sim AM sigma rep explained later

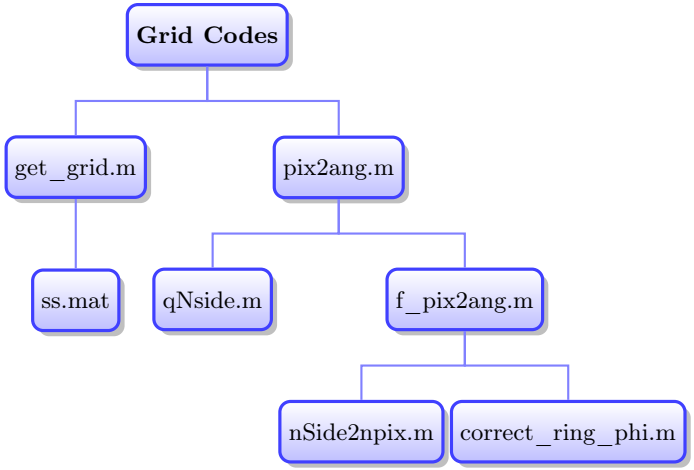
Running the Code

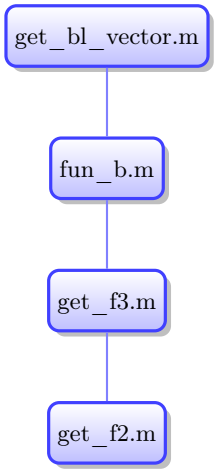
- Have all your files in the same folder (there are a ton of dependencies as shown below).
- You should only have to run batch file though once everything is together.
- The batch file I've used is far from good. Often I make lots of changes to sim AM sigma rep file before completing a run.
- My typical procedure involved thinning the data first. This is done in sim Am sigma rep with the thin parameter
- After data is thinned I would need to save the thinned theta values into R code (deriv B spline .R) to get the derivative data. This would then be the data that put into line 102 of tweak sd sim (a version of sim AM sigma rep)
- Then I would run the batch file on a super computer.
- I did lots of analysis using post data batch.m

Different version of sim AM sigma rep

- leaving out underscores and corresponding batch files
- real sim AM sigma rep (first attempt at getting real data into the process includes changes of the design matrix)
- irreg sim AM sigma rep (real but incorporating missing sections of data)
- data sim AM sigma rep (able to take full super darn data)
- sd thin sim (this is the one that should be used most often its simple and thins the data and has magnetic field incrporated)
- sd thin o sim (above except with crude outlier removal)
- sd tweak batch (sd thin sim with MCMC tweak incorporated)


sim_AM_sigma_rep.m
Grid Codes*
Design Matrix: GA
Gibbs Sampling
B-splines: G
Design Matrices: A_1 and A_2
real_Gibbs_Sampler_AM_sigma_rep.m
bspline_basismatrix.m
Derivatives
get_A_full.m
Initial and Beta MLE
bspline_basis.m
deriv_b_spline.R
get_A_part_ss.m
get_A_ss.m
real_Gaussian_Needlet_fit.m
get_bl_vector.m*
spneedlet_part_eval_fast.m
p_polynomial_prime.m
get_bl_vector.m*
spneedlet_eval_fast.m
p_polynomial_value.m
derive_b_spline.mat
real_negloglik_Gaussian_Needlet.m
real_get_cov_Gaussian_Needlet.m


Grid Codes
get_grid.m
pix2ang.m
ss.mat
qNside.m
f_pix2ang.m
nSide2npix.m
correct_ring_phi.m


get_bl_vector.m
fun_b.m
get_f3.m
get_f2.m