**Supplements.** Multi-site Normative Modeling of Diffusion Tensor Imaging Metrics Using Hierarchical Bayesian Regression. (Villalón-Reina et al., MICCAI 2022.)

Figure 1. Age analysis. Here we show the age trajectory for DTI FA and AD for the PLIC (Posterior Limb of the Internal Capsule) fitted with cubic b-splines. This ROI showed significant deviations for 16pDel in at least 9 out of 10 iterations for all three models (linear, polynomial, *b*-spline). <u>Note:</u> The predictions of HBR for f_μ are not harmonized but the Z-scores are. Consequently, the model does not yield a set of "corrected" data, i.e., with the batch variability removed, as in ComBat. Hence, before fitting age with the b-splines here we corrected the data points with Combat-GAM (Pomponio R. et al., NeuroImage 208, 116450, 2020). FA: We see that FA increases up to 18-20 years, it reaches a plateau and starts descending slowly as age increases. AD: We see that AD decreases until age 45-50 and then increases slowly in the older decades of age (50-80 years).
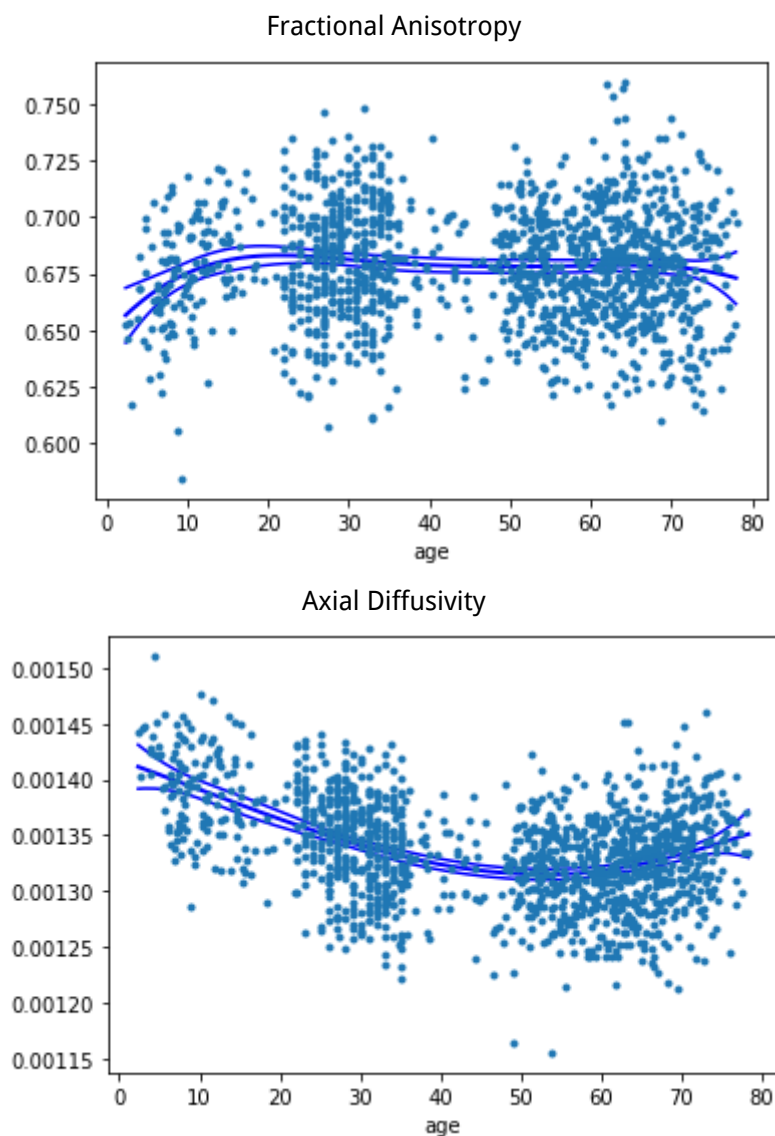
Figure 2. Results for <u>Fractional Anisotropy (FA)</u> for the three model types. Colored ROIs passed FDR in at least 9 out of 10 experimental iterations. Color bars show the mean AUC for the ROIs across the iterations that yielded significant differences.
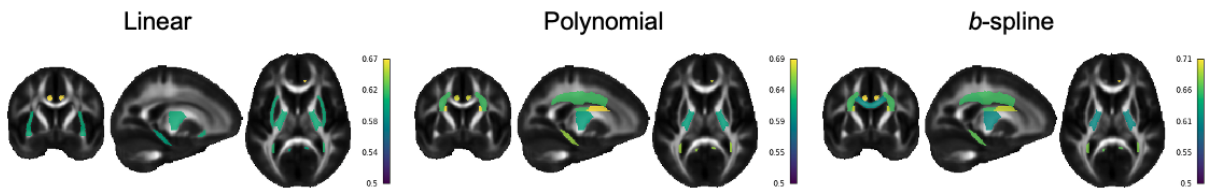
Figure 3. Results for Mean Diffusivity (MD), Radial Diffusivity (RD) and Axial Diffusivity (AD) for the polynomial model. Colored ROIs passed FDR in at least 9 out of 10 experimental iterations. Color bars show the mean AUC for the ROIs across the 9 iterations.
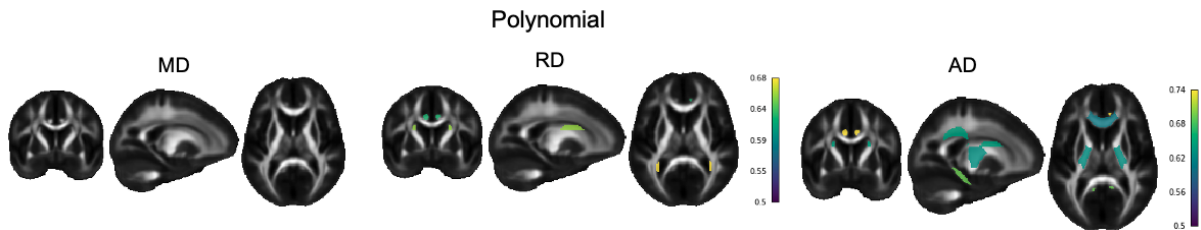
Figure 4. ENIGMA-DTI template with the Regions of Interest of the Johns Hopkins White Matter (JHU-WM) atlas overlayed.

#		#		#	
1	GCC = Genu of corpus callosum	7	RLIC = Retrolenticular part of internal capsule	13	SS = Sagittal Stratum
2	BCC = Body of corpus callosum	8	ACR = Anterior corona radiata	14	CGC = Cingulum (cingulate gyrus)
3	SCC = Splenium of corpus callosum	9	SCR = Superior corona radiata	15	UNC = Uncinate fasciculus
4	TAP = Tapetum of the corpus callosum	10	PCR = Posterior corona radiata	16	FXST = Fornix (crus) / Stria terminalis
5	ALIC = Anterior limb of internal capsule	11	PTR = Posterior thalamic radiation	17	SLF = Superior longitudinal fasciculus
6	PLIC = Posterior limb of internal capsule	12	EC = External/Extreme Capsule	18	SFO = Superior fronto-occipital fasciculus
19	CGH = Cingulum (hippocampus)	20	FX = Fornix (column and body)		