

Predicting RMSE Difference (Eddy — SHORELine) in ABCD & HCP Schemes

Main Effects of Denoising & Percent Motion, and interactions with Shell Scheme

Characteristic	Translation			Rotation		
	Beta	95% CI ¹	p-value	Beta	95% CI ¹	p-value
(Intercept)	0.129	0.042, 0.216	0.004	0.297	0.056, 0.538	0.016
Scheme						
ABCD	—	—		—	—	
HCP	0.059	-0.065, 0.182	0.3	0.254	-0.087, 0.595	0.14
Denoising						
MP-PCA	—	—		—	—	
None	0.302	0.178, 0.425	<0.001	0.512	0.171, 0.853	0.003
% Motion	-0.007	-0.009, -0.004	<0.001	-0.037	-0.044, -0.030	<0.001
Scheme * Denoising						
HCP * None	-0.286	-0.460, -0.112	0.001	-0.215	-0.697, 0.267	0.4
Scheme * % Motion						
HCP * % Motion	0.006	0.003, 0.010	<0.001	0.011	0.001, 0.020	0.034
Denoising * % Motion						
None * % Motion	0.002	-0.001, 0.006	0.2	0.033	0.023, 0.043	<0.001
Scheme * Denoising * % Motion						
HCP * None * % Motion	-0.003	-0.008, 0.002	0.2	-0.028	-0.042, -0.014	<0.001

¹ CI = Confidence Interval

Supplementary Listing 2: Comparing Eddy & SHORELine RMSE. The SHORELine RMSE value was subtracted from the Eddy RMSE from each simulated scan, and this difference was the outcome variable of the model. Positive Beta estimates suggest better performance by SHORELine. SHORELine shows less error than Eddy for all scenarios without denoising, but Eddy showed slightly superior performance when data was first denoised with MP-PCA.