



Supplementary Figure 1. The orientation dependent R_2^* in basal ganglia. (A) A basal ganglia ROI at 0° orientation (the neighboring corpus callosum is parallel to B_0). (B) The R_2^* measurements (green solid line) and the suscep-aniso model fitted curve (blue dashed line). The fitting resulted in a relatively poor fit (maximum $R^2 = 0.51$ when the orientation was rotated by 101°), a small ΔR_2^* estimation ($= -1.0$ Hz from the fitted line), and zero coefficient for the $\cos 4\theta$ term. These results suggest that the basal ganglia ROI has limited, if any, B_0 orientation dependent R_2^* contrast. The small negative offset may have been introduced by the field inhomogeneity.