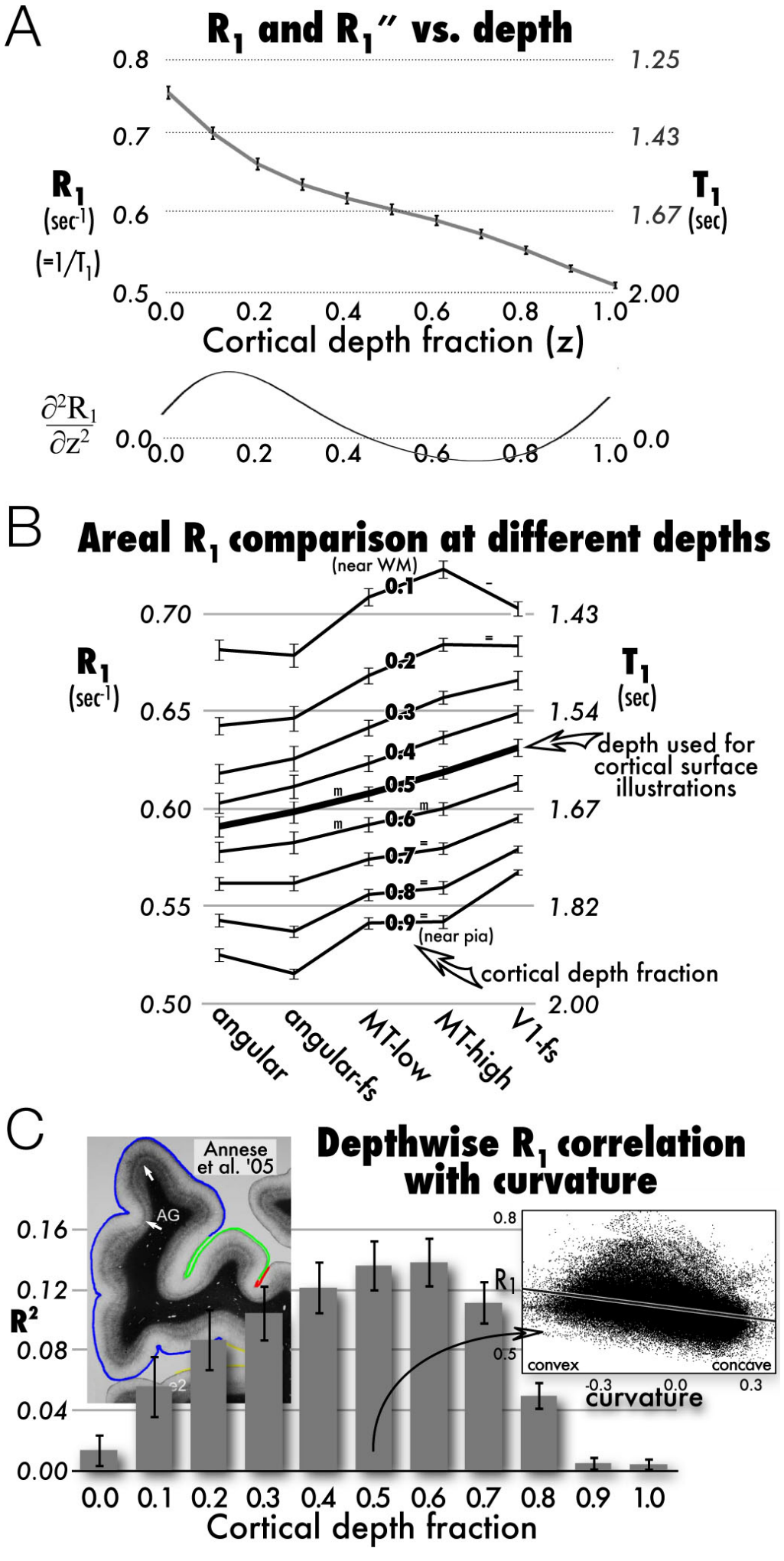
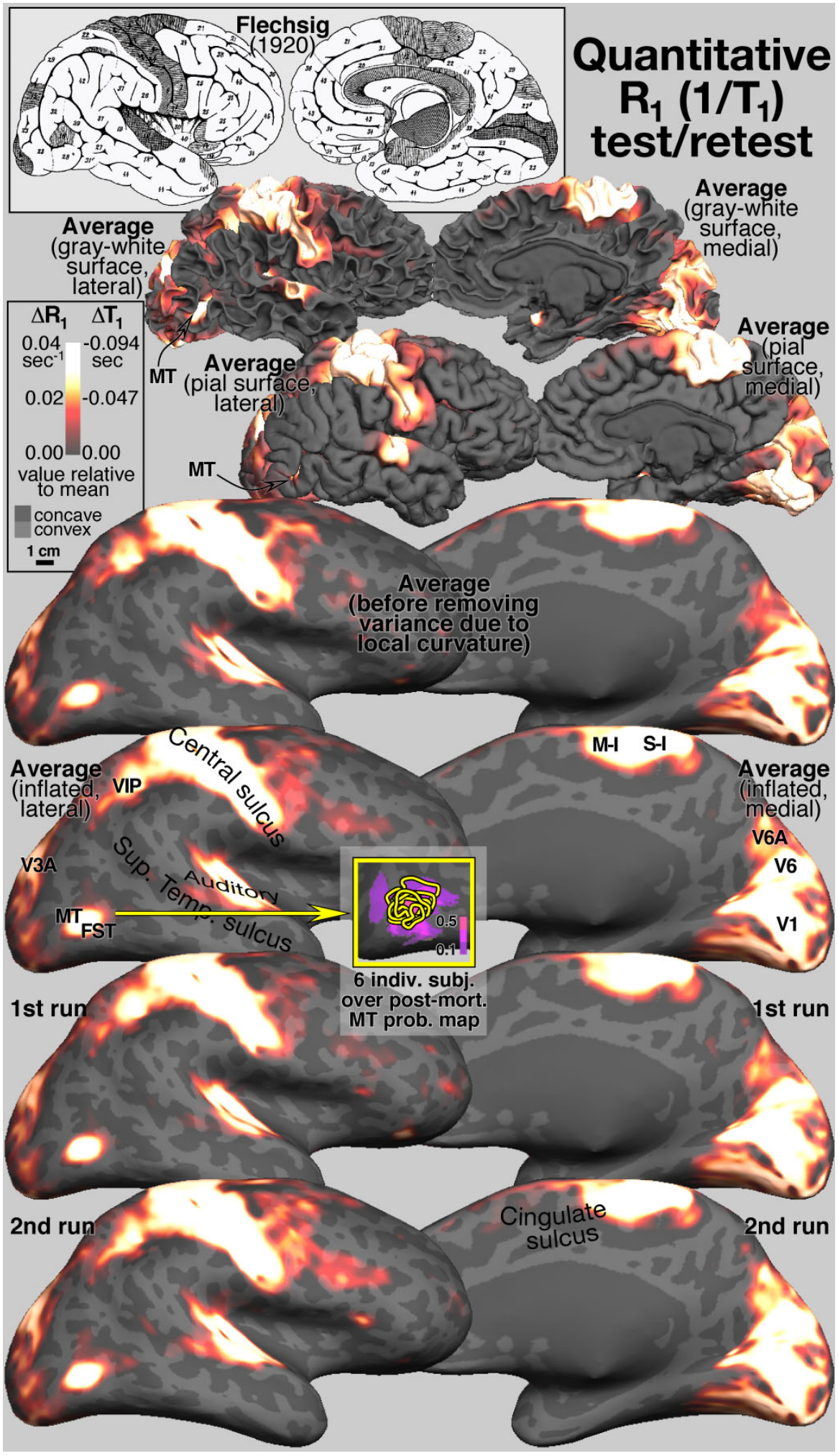
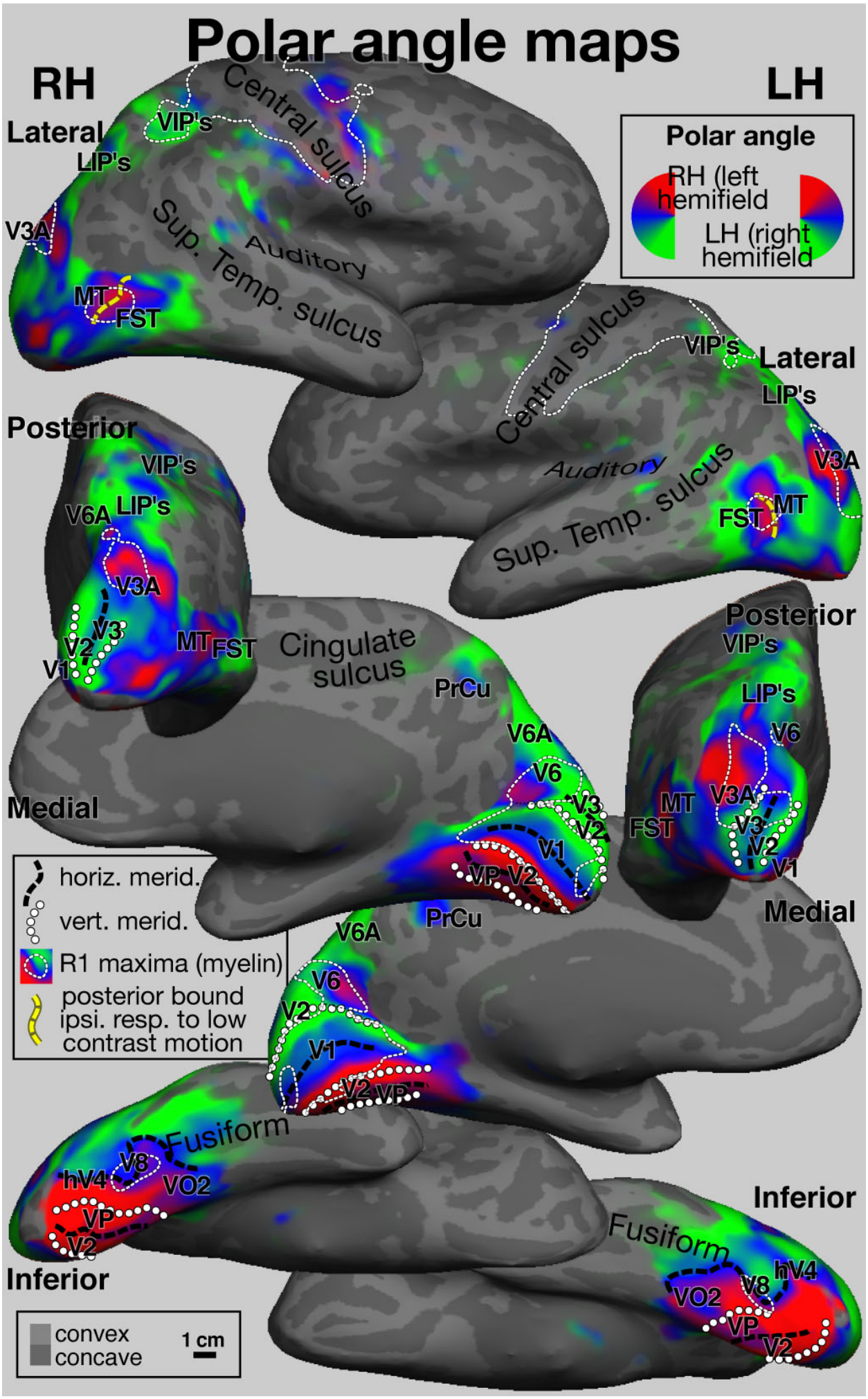
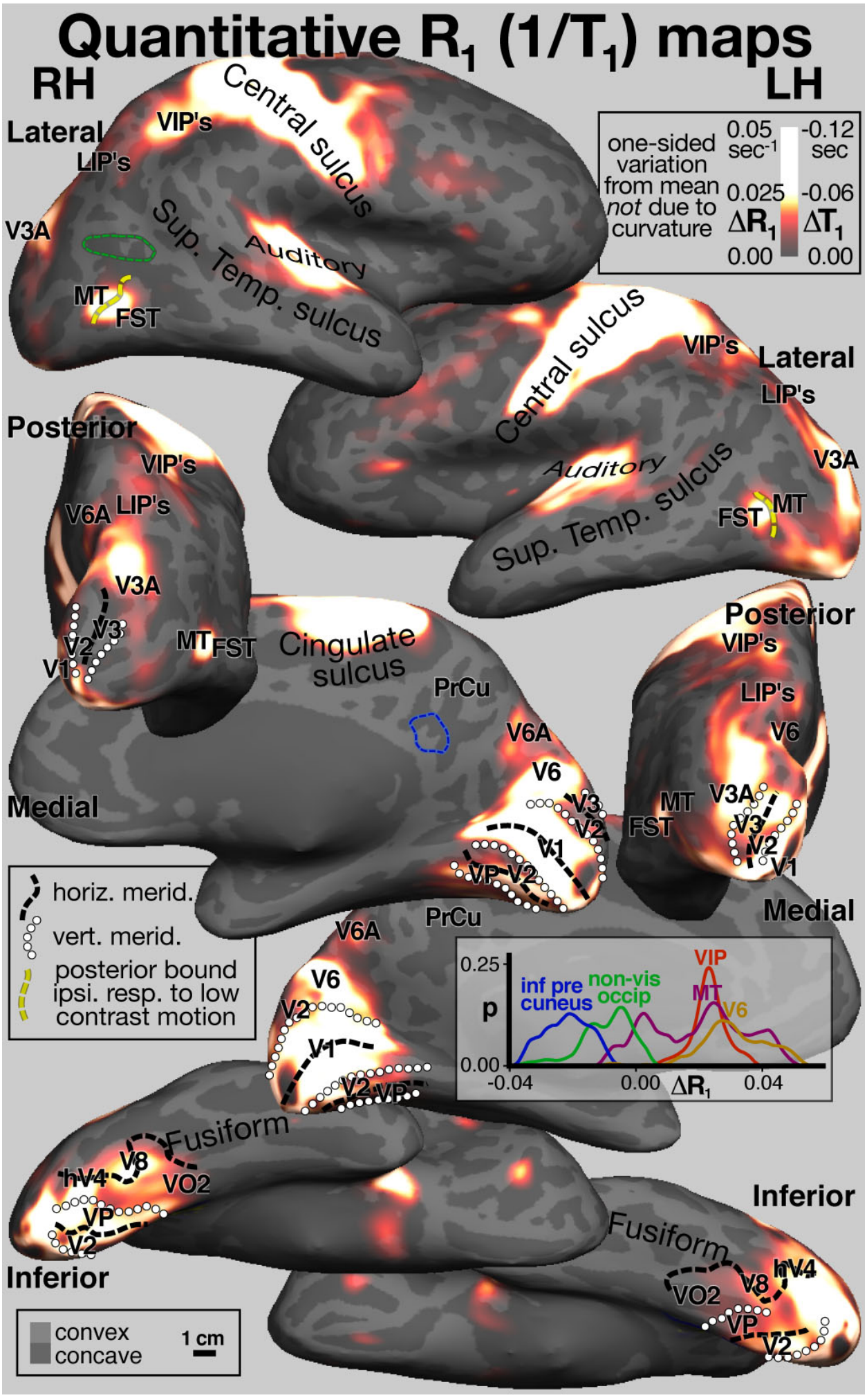
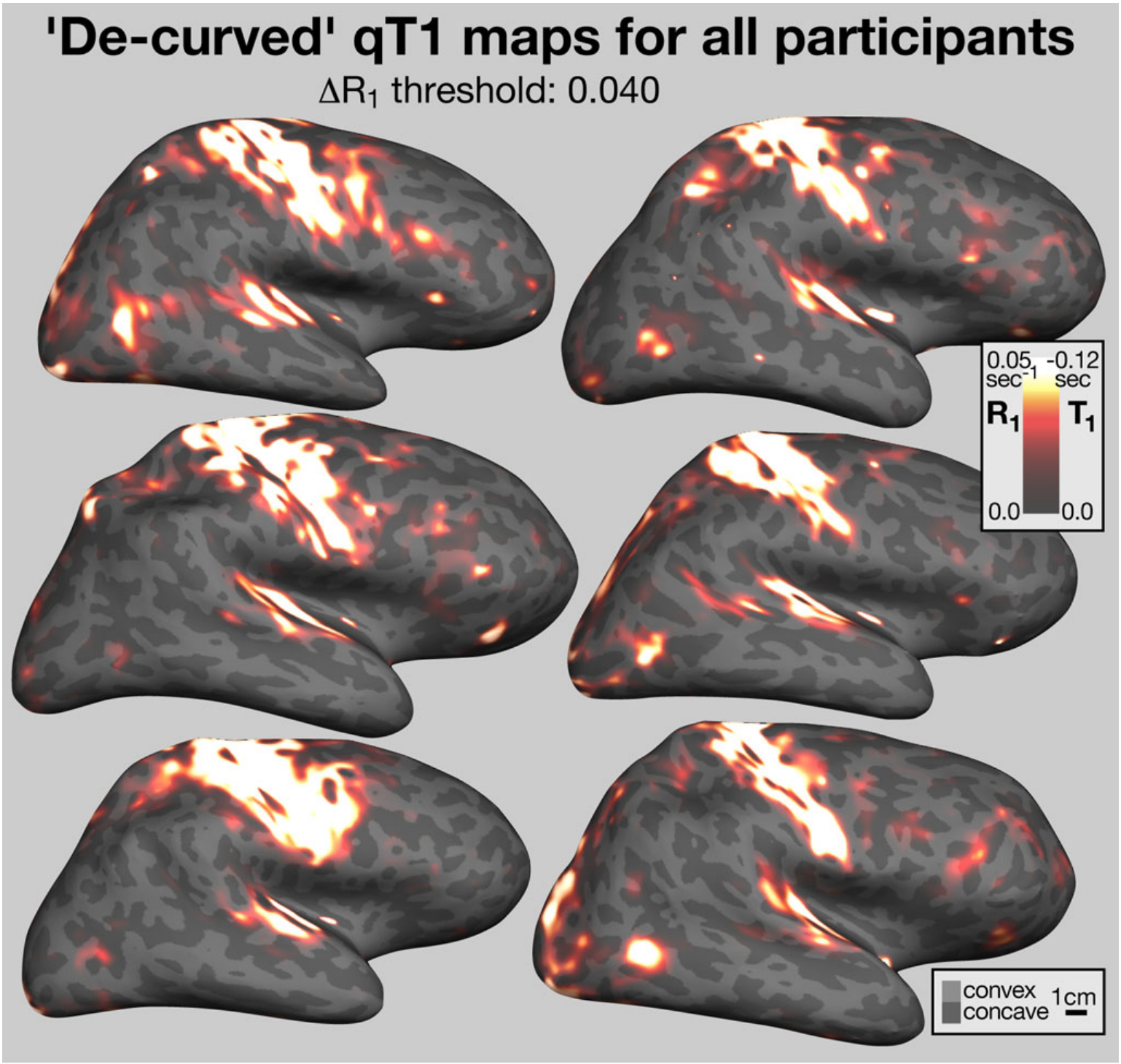
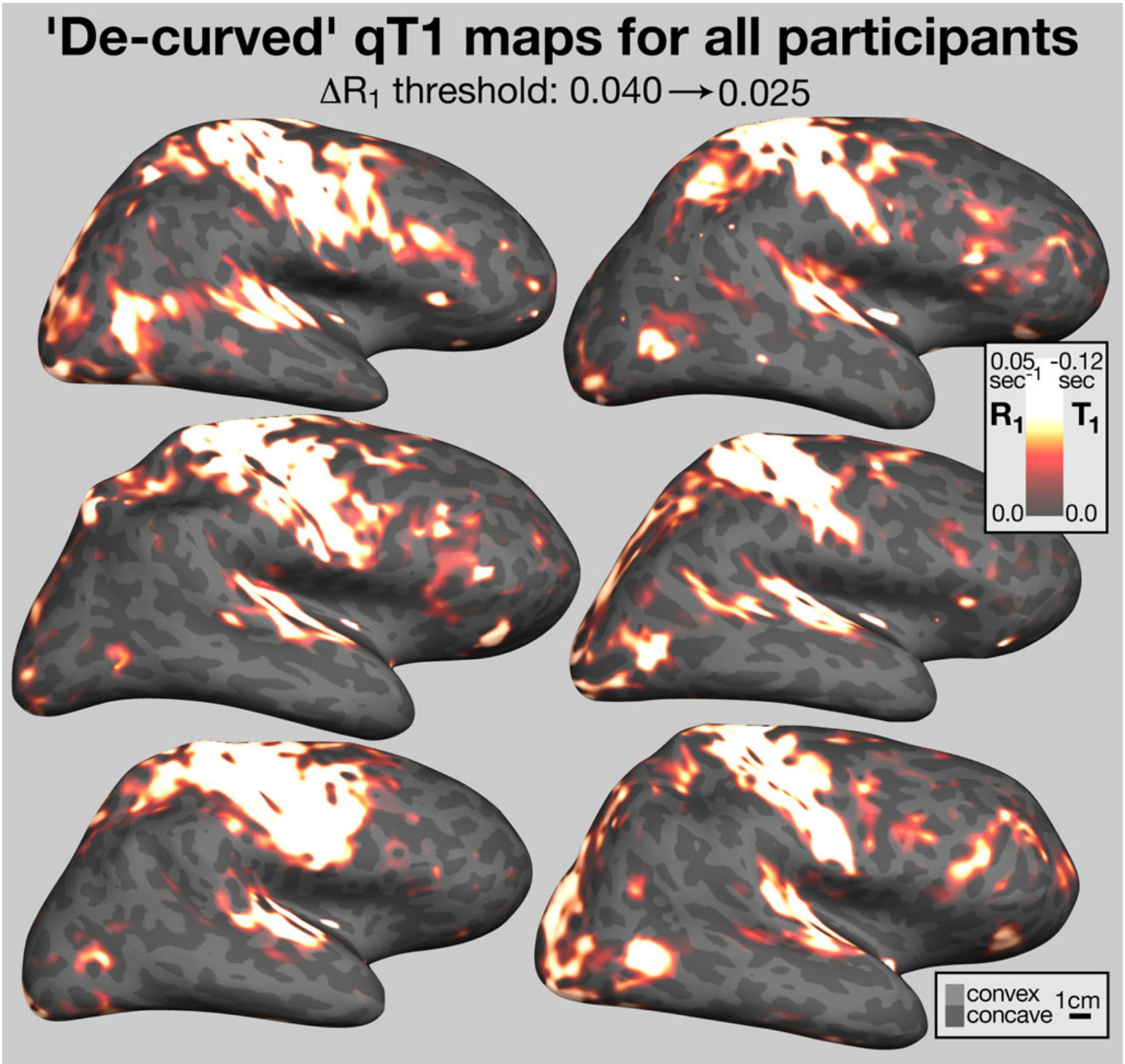

A
R1 and R1″ vs. depth
0.8
0.7
0.6
0.5
R1 (sec-1) (=1/T1)
1.25
1.43
1.67
2.00
T1 (sec)
0.0 0.2 0.4 0.6 0.8 1.0
Cortical depth fraction (z)
∂²R1/∂z²
0.0
0.0 0.2 0.4 0.6 0.8 1.0
B
Areal R1 comparison at different depths
(near WM)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
(near pia)
0.70
0.65
0.60
0.55
0.50
R1 (sec-1)
1.43
1.54
1.67
1.82
2.00
T1 (sec)
depth used for cortical surface illustrations
cortical depth fraction
angular
angular-fs
MT-low
MT-high
V1-fs
C
Depthwise R1 correlation with curvature
Annese et al. '05
AG
0.16
0.12
0.08
0.04
0.00
R²
0.8
0.5
R1
convex
concave
-0.3 0.0 0.3
curvature
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
Cortical depth fraction


Flechsig (1920)
Quantitative R_1 ($1/T_1$) test/retest
Average (gray-white surface, lateral)
Average (gray-white surface, medial)
Average (pial surface, lateral)
Average (pial surface, medial)
MT
MT
ΔR_1 ΔT_1
0.04 sec^{-1} -0.094 sec
0.02 -0.047
0.00 0.00
value relative to mean
concave
convex
1 cm
Average (before removing variance due to local curvature)
Average (inflated, lateral)
Average (inflated, medial)
Central sulcus
VIP
V3A
Sup. Temp. sulcus
Auditory
MT
FST
M-I
S-I
V6A
V6
V1
0.5
0.1
6 indiv. subj. over post-mort. MT prob. map
1st run
1st run
2nd run
2nd run
Cingulate sulcus


Polar angle maps
RH
LH
Lateral
VIP's
LIP's
V3A
Central sulcus
Sup. Temp. sulcus
Auditory
MT
FST
Polar angle
RH (left hemifield
LH (right hemifield
Posterior
V6A
V3
V2
V1
Cingulate sulcus
PrCu
Medial
V6
VP
Fusiform
V8
hV4
VO2
Inferior
horiz. merid.
vert. merid.
R1 maxima (myelin)
posterior bound ipsi. resp. to low contrast motion
convex
concave
1 cm


Quantitative R_1 ($1/T_1$) maps
RH
LH
Lateral
VIP's
LIP's
V3A
Central sulcus
Sup. Temp. sulcus
Auditory
MT
FST
one-sided variation from mean *not* due to curvature
0.05 sec^{-1}
0.025
0.00
ΔR_1
-0.12 sec
-0.06
0.00
ΔT_1
Posterior
V6A
V3
V2
V1
Cingulate sulcus
PrCu
V6
Medial
VP
horiz. merid.
vert. merid.
posterior bound ipsi. resp. to low contrast motion
0.25
p
0.00
inf pre cuneus
non-vis occip
VIP
MT
V6
-0.04
0.00
0.04
Fusiform
hV4
V8
VO2
Inferior
convex
concave
1 cm


'De-curved' qT1 maps for all participants
ΔR1 threshold: 0.040
0.05 sec-1
R1
0.0
-0.12 sec
T1
0.0
convex
concave
1cm


'De-curved' qT1 maps for all participants
ΔR1 threshold: 0.040 → 0.025
0.05 sec-1
R1
0.0
-0.12 sec
T1
0.0
convex
concave
1cm