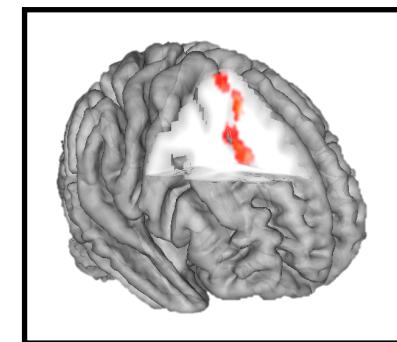
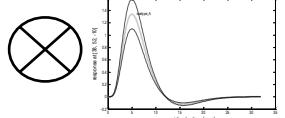
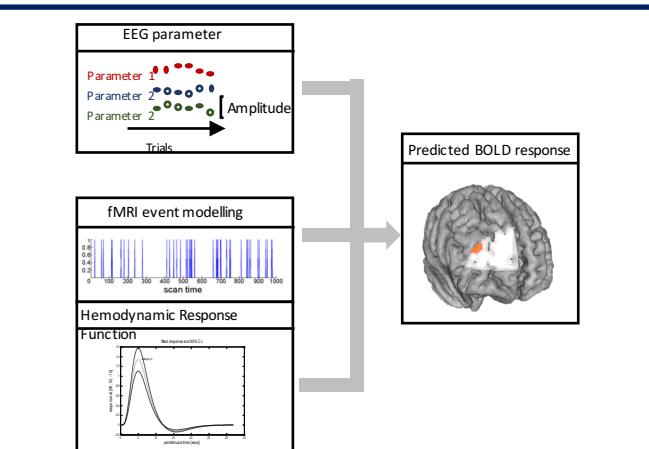
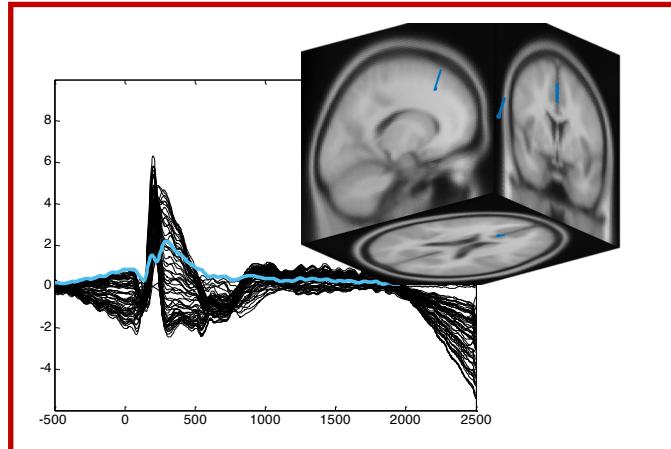


Hemodynamic lag - (De-)Convolution with HRF



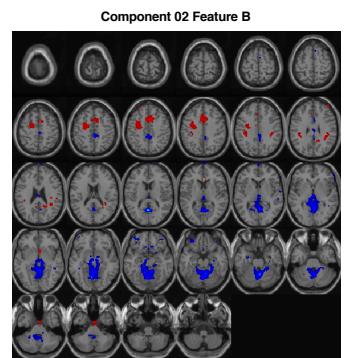
Asymmetric Integration

fMRI-informed EEG Source Estimation



EEG-informed fMRI BOLD prediction with parametric EEG regressor

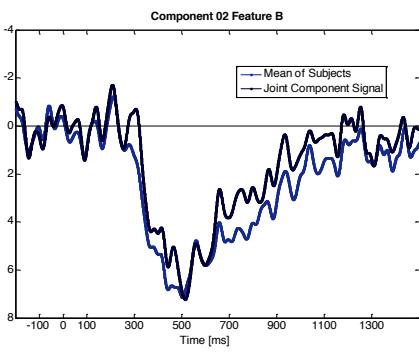
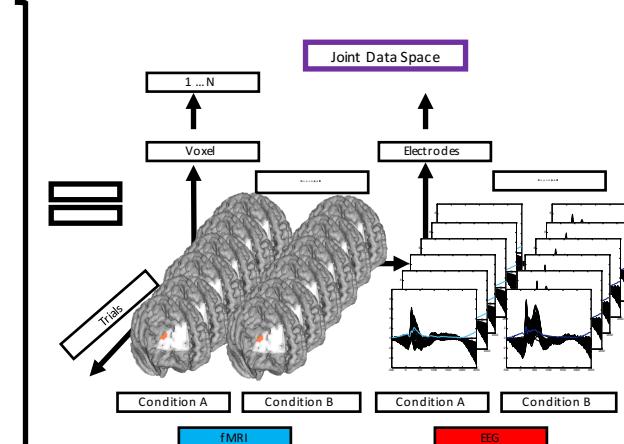
Joint and Parallel Independent Component Analysis



Multimodal Data Fusion

Partial Least Squares with nested single trial modeling

| ID | Modality | Block | Type | Trialdatas | |
|-----|----------|-------|------|------------|-----|
| 1 | 1 | 1 | 1 | 0.5 | ... |
| 1 | 1 | 1 | 3 | 10 | ... |
| 1 | 1 | 1 | 1 | 1.5 | ... |
| 1 | 1 | 2 | 2 | 7.3 | ... |
| 1 | 1 | 2 | 1 | 5.5 | ... |
| 1 | 1 | 2 | 2 | 4.1 | ... |
| 1 | 1 | 2 | 1 | 2.3 | ... |
| 1 | 1 | 3 | 1 | 0.2 | ... |
| 1 | 2 | 1 | 4 | 11 | ... |
| ... | ... | ... | ... | ... | ... |



Multimodal Canonical Correlation Analysis

| | | | |
|----|----|----|----|
| CV | CV | CV | CV |
| CV | S | | |
| CV | | S | |
| CV | | | S |
| CV | | | |

$$(X' X)^{-\frac{1}{2}} X' Y (Y' Y)^{-\frac{1}{2}} = USV'$$

Canonical Variates (CV):
eigenvectors $U(i)_{p \times 1}$ and
 $V(i)_{q \times 1}$
... and squared canonical
correlations $S_{q \times q}^2$