

# Working Memory (WM)

## Baseline To Peak (BTP) Report

**Directory:** Z:\\_Published Paper Analyses\Sanford\_Dissertation\_2019\ch4\_1task\WM\fmRI  
\Automated\_Classifications

**Study:** Sanford Dissertation (2019)

### Table of Contents

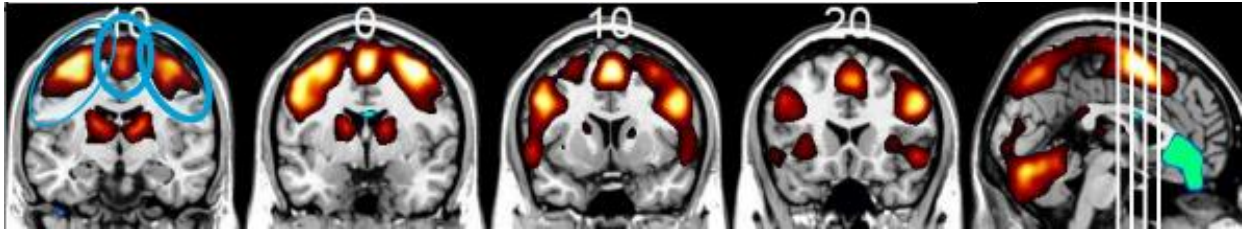
Summary: Peak Timebins .....	2.
Varimax Rotation .....	3.
Component #1 (C1_WM_Pos_90_1RESP_1.48) .....	3.
Component #1: BTP Analysis .....	4.
Component #2 (C2_WM_Pos_79_INIT_1.21) .....	11.
Component #2: BTP Analysis .....	12.
Component #3 (C3_WM_Neg_90_TDMN_1.50) .....	18.
Component #3: BTP Analysis .....	20.

## Summary: Peak Timebins

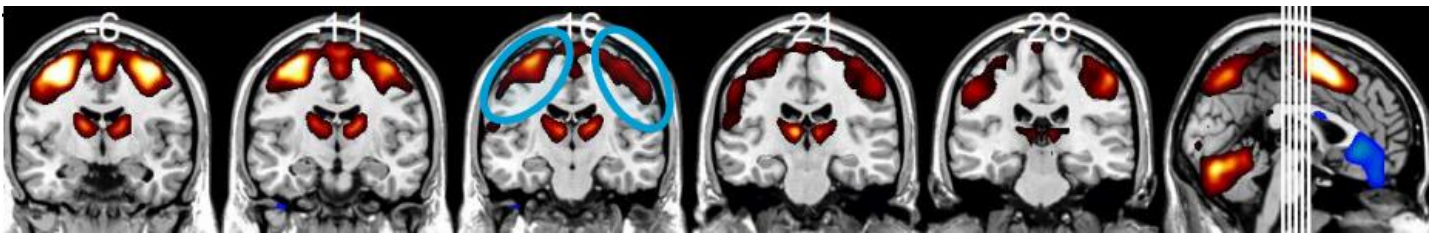
Component No.	Network	Group	Task Condition	Start	Peak	End	Sub-Zero Peak
1	1RESP	Length4	Delay0	4	6	7	8
1	1RESP	Length4	Delay4	6	8	10	-
1	1RESP	Length6	Delay0	3	5	7	8
1	1RESP	Length6	Delay4	3	7	10	-
2	INIT	Length4	Delay0	1	4	8	-
2	INIT	Length4	Delay4	1	4	6	-
2	INIT	Length6	Delay0	1	4	8	-
2	INIT	Length6	Delay4	1	4	7	-
3	TDMN	Length4	Delay0	1	5	10	-
3	TDMN	Length4	Delay4	1	7	10	-
3	TDMN	Length6	Delay0	1	5	10	-
3	TDMN	Length6	Delay4	1	7	10	-

## Varimax Rotation

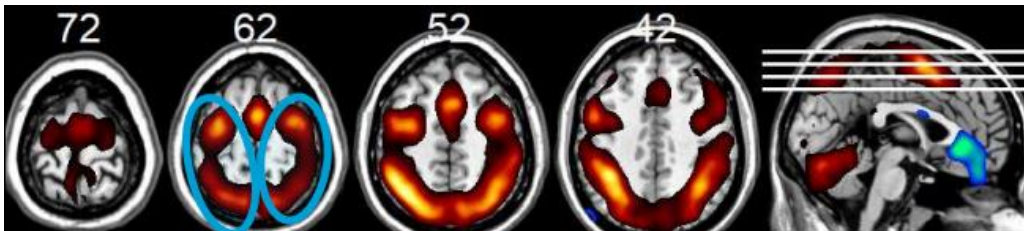
### Component #1 (C1\_WM\_Pos\_90\_1RESP\_1.48)



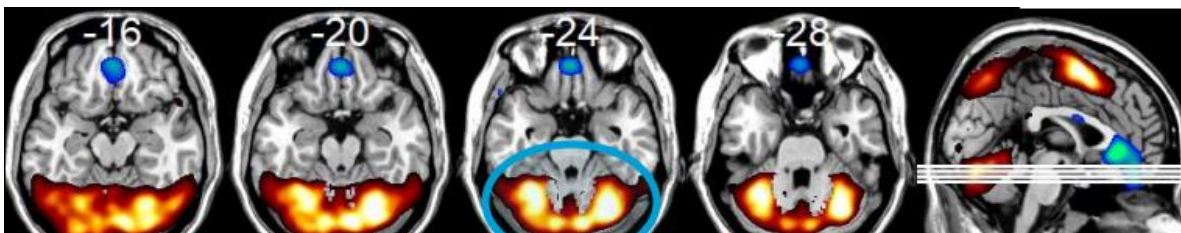
**Figure 1:** Bat (one sided if one-handed response). Orientation: Coronal, Slices: 116,126,136,146 ( $z = 1.41$ ).



**Figure 2:** Thalamus kite surfer. Orientation: Coronal, Slices: 120,115,110,105,100 ( $z = 1.62$ ).



**Figure 3:** Butterfly (one sided if one-handed response). Orientation: Axial, Slices: 144,134,124,114 ( $z = 1.50$ ).

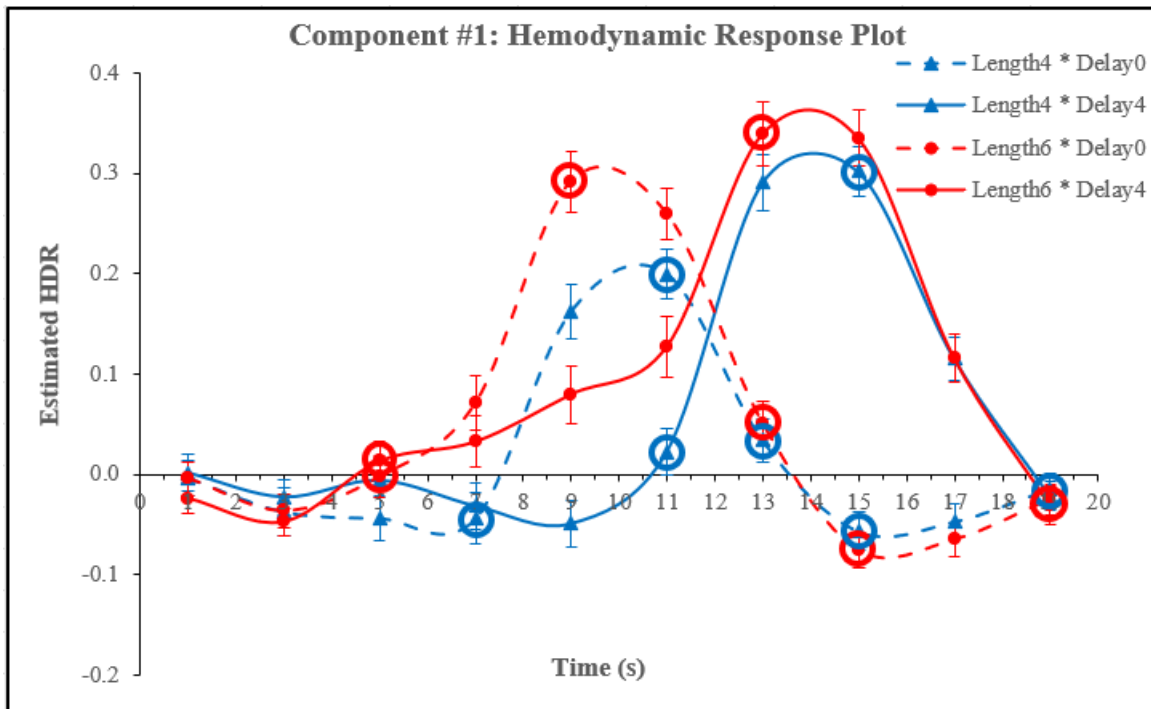


**Figure 4:** Compact crab claw. Orientation: Axial, Slices: 56,52,48,44 ( $z = 1.27$ ).

## Component #1: BTP Analysis

Component No.	Network	Group	Task Condition	Start	Peak	End	Sub-Zero Peak
1	1RESP	Length4	Delay0	4	6	7	8
1	1RESP	Length4	Delay4	6	8	10	-
1	1RESP	Length6	Delay0	3	5	7	8
1	1RESP	Length6	Delay4	3	7	10	-

## HDR Plot



**Figure 5:** Component #1 (C1\_WM\_Pos\_90\_1RESP\_1.48) Varimax HDR for the Working Memory (WM) Task (Length4\_Length6) x Group (Delay0\_Delay4).

## SPSS Syntax

```
DO IF(Length4_Length6 = 1).  
compute 1RESP_4L_0D_start = 4.  
compute 1RESP_4L_0D_peak = 6.  
compute 1RESP_4L_0D_end = 7.  
compute 1RESP_4L_0D_subzero_peak = 8.  
compute 1RESP_4L_0D_start_pw = C1_Length4_Delay0_4.  
compute 1RESP_4L_0D_peak_pw = C1_Length4_Delay0_6.  
compute 1RESP_4L_0D_end_pw = C1_Length4_Delay0_7.  
compute 1RESP_4L_0D_subzero_peak_pw = C1_Length4_Delay0_8.  
  
compute 1RESP_4L_4D_start = 6.  
compute 1RESP_4L_4D_peak = 8.  
compute 1RESP_4L_4D_end = 9.  
compute 1RESP_4L_4D_subzero_peak = -88.  
compute 1RESP_4L_4D_start_pw = C1_Length4_Delay4_6.  
compute 1RESP_4L_4D_peak_pw = C1_Length4_Delay4_8.  
compute 1RESP_4L_4D_end_pw = C1_Length4_Delay4_9.  
compute 1RESP_4L_4D_subzero_peak_pw = -88.  
  
compute 1RESP_4L_0D_up = mean(C1_Length4_Delay0_4 TO C1_Length4_Delay0_6).  
compute 1RESP_4L_4D_up = mean(C1_Length4_Delay4_6 TO C1_Length4_Delay4_8).  
compute 1RESP_4L_0D_down = mean(C1_Length4_Delay0_7 TO C1_Length4_Delay0_7).  
compute 1RESP_4L_4D_down = mean(C1_Length4_Delay4_9 TO C1_Length4_Delay4_9).  
  
compute 1RESP_4L_0D_start_to_peak = 1RESP_4L_0D_peak - 1RESP_4L_0D_start.  
compute 1RESP_4L_4D_start_to_peak = 1RESP_4L_4D_peak - 1RESP_4L_4D_start.  
compute 1RESP_4L_0D_peak_to_end = 1RESP_4L_0D_end - 1RESP_4L_0D_peak.
```

**compute** 1RESP\_4L\_4D\_peak\_to\_end = 1RESP\_4L\_4D\_end - 1RESP\_4L\_4D\_peak.

**compute** 1RESP\_4L\_0D\_slope\_to\_suppress = 1RESP\_4L\_0D\_subzero\_peak -  
1RESP\_4L\_0D\_end.

**compute** 1RESP\_4L\_4D\_slope\_to\_suppress = 1RESP\_4L\_4D\_subzero\_peak - 1.

**EXECUTE.**

**ELSE IF** (Length4\_Length6 = 2).

**compute** 1RESP\_6L\_0D\_start = 3.

**compute** 1RESP\_6L\_0D\_peak = 5.

**compute** 1RESP\_6L\_0D\_end = 7.

**compute** 1RESP\_6L\_0D\_subzero\_peak = 8.

**compute** 1RESP\_6L\_0D\_start\_pw = C1\_Length6\_Delay0\_3.

**compute** 1RESP\_6L\_0D\_peak\_pw = C1\_Length6\_Delay0\_5.

**compute** 1RESP\_6L\_0D\_end\_pw = C1\_Length6\_Delay0\_7.

**compute** 1RESP\_6L\_0D\_subzero\_peak\_pw = C1\_Length6\_Delay0\_8.

**compute** 1RESP\_6L\_4D\_start = 3.

**compute** 1RESP\_6L\_4D\_peak = 7.

**compute** 1RESP\_6L\_4D\_end = 9.

**compute** 1RESP\_6L\_4D\_subzero\_peak = -88.

**compute** 1RESP\_6L\_4D\_start\_pw = C1\_Length6\_Delay4\_3.

**compute** 1RESP\_6L\_4D\_peak\_pw = C1\_Length6\_Delay4\_7.

**compute** 1RESP\_6L\_4D\_end\_pw = C1\_Length6\_Delay4\_9.

**compute** 1RESP\_6L\_4D\_subzero\_peak\_pw = -88.

**compute** 1RESP\_6L\_0D\_up = **mean**(C1\_Length6\_Delay0\_3 TO C1\_Length6\_Delay0\_5).

**compute** 1RESP\_6L\_4D\_up = **mean**(C1\_Length6\_Delay4\_3 TO C1\_Length6\_Delay4\_7).

**compute** 1RESP\_6L\_0D\_down = **mean**(C1\_Length6\_Delay0\_6 TO C1\_Length6\_Delay0\_7).

**compute** 1RESP\_6L\_4D\_down = **mean**(C1\_Length6\_Delay4\_8 TO C1\_Length6\_Delay4\_9).

**compute** 1RESP\_6L\_0D\_start\_to\_peak = 1RESP\_6L\_0D\_peak - 1RESP\_6L\_0D\_start.

**compute** 1RESP\_6L\_4D\_start\_to\_peak = 1RESP\_6L\_4D\_peak - 1RESP\_6L\_4D\_start.

**compute** 1RESP\_6L\_0D\_peak\_to\_end = 1RESP\_6L\_0D\_end - 1RESP\_6L\_0D\_peak.

**compute** 1RESP\_6L\_4D\_peak\_to\_end = 1RESP\_6L\_4D\_end - 1RESP\_6L\_4D\_peak.

**compute** 1RESP\_6L\_0D\_slope\_to\_suppress = 1RESP\_6L\_0D\_subzero\_peak  
1RESP\_6L\_0D\_end.

**compute** 1RESP\_6L\_4D\_slope\_to\_suppress = 1RESP\_6L\_4D\_subzero\_peak - 1.

**END IF.**

**EXECUTE.**

## **VARIABLE LABELS**

1RESP\_4L\_0D\_start 'time bin closest to where activity begins to increase for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_peak 'time bin closest to HDR peak for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_end 'time bin closest to where HDR returns to baseline level for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_subzero\_peak 'time bin closest to maximum suppression for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length4\_Delay0 condition'

1RESP\_4L\_0D\_start\_to\_peak 'number of time bins from start to peak for Length4\_Delay0 condition'

1RESP\_4L\_0D\_peak\_to\_end 'number of time bins from peak to end for Length4\_Delay0 condition'

1RESP\_4L\_0D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length4\_Delay0 condition'

1RESP\_4L\_4D\_start 'time bin closest to where activity begins to increase for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_peak 'time bin closest to HDR peak for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_end 'time bin closest to where HDR returns to baseline level for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_subzero\_peak 'time bin closest to maximum suppression for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length4\_Delay4 condition'

1RESP\_4L\_4D\_start\_to\_peak 'number of time bins from start to peak for Length4\_Delay4 condition'

1RESP\_4L\_4D\_peak\_to\_end 'number of time bins from peak to end for Length4\_Delay4 condition'

1RESP\_4L\_4D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length4\_Delay4 condition'

1RESP\_6L\_0D\_start 'time bin closest to where activity begins to increase for the Length6\_Delay0 condition'

1RESP\_6L\_0D\_peak 'time bin closest to HDR peak for the Length6\_Delay0 condition'

1RESP\_6L\_0D\_end 'time bin closest to where HDR returns to baseline level for the Length6\_Delay0 condition'

1RESP\_6L\_0D\_subzero\_peak 'time bin closest to maximum suppression for the Length6\_Delay0 condition'



1RESP\_6L\_0D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length6\_Delay0 condition'

1RESP\_6L\_0D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length6\_Delay0 condition'

1RESP\_6L\_0D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length6\_Delay0 condition'

1RESP\_6L\_0D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length6\_Delay0 condition'

1RESP\_6L\_0D\_start\_to\_peak 'number of time bins from start to peak for Length6\_Delay0 condition'

1RESP\_6L\_0D\_peak\_to\_end 'number of time bins from peak to end for Length6\_Delay0 condition'

1RESP\_6L\_0D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length6\_Delay0 condition'

1RESP\_6L\_4D\_start 'time bin closest to where activity begins to increase for the Length6\_Delay4 condition'

1RESP\_6L\_4D\_peak 'time bin closest to HDR peak for the Length6\_Delay4 condition'

1RESP\_6L\_4D\_end 'time bin closest to where HDR returns to baseline level for the Length6\_Delay4 condition'

1RESP\_6L\_4D\_subzero\_peak 'time bin closest to maximum suppression for the Length6\_Delay4 condition'

1RESP\_6L\_4D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length6\_Delay4 condition'

1RESP\_6L\_4D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length6\_Delay4 condition'

1RESP\_6L\_4D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length6\_Delay4 condition'

1RESP\_6L\_4D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length6\_Delay4 condition'

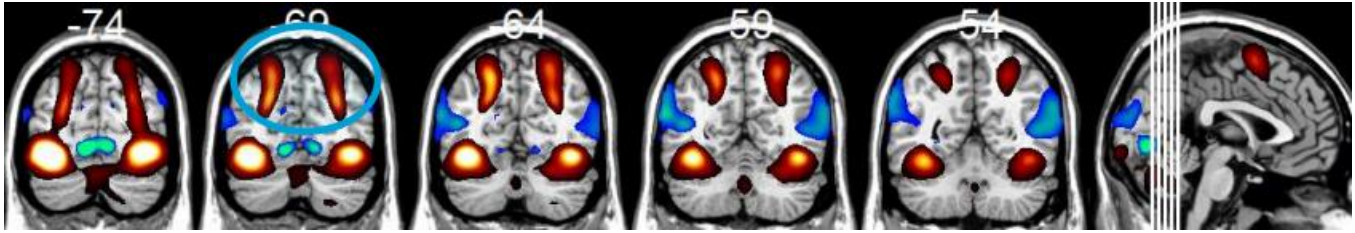
1RESP\_6L\_4D\_start\_to\_peak 'number of time bins from start to peak for Length6\_Delay4 condition'

1RESP\_6L\_4D\_peak\_to\_end 'number of time bins from peak to end for Length6\_Delay4 condition'

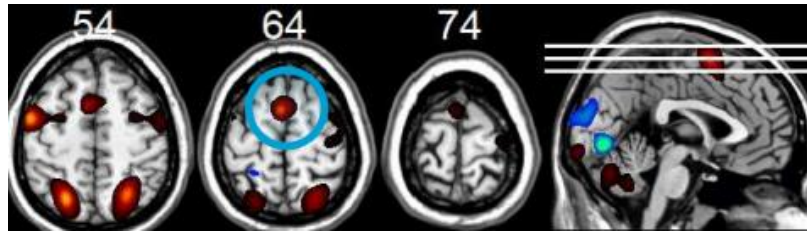
1RESP\_6L\_4D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for  
Length6\_Delay4 condition'

**EXECUTE.**

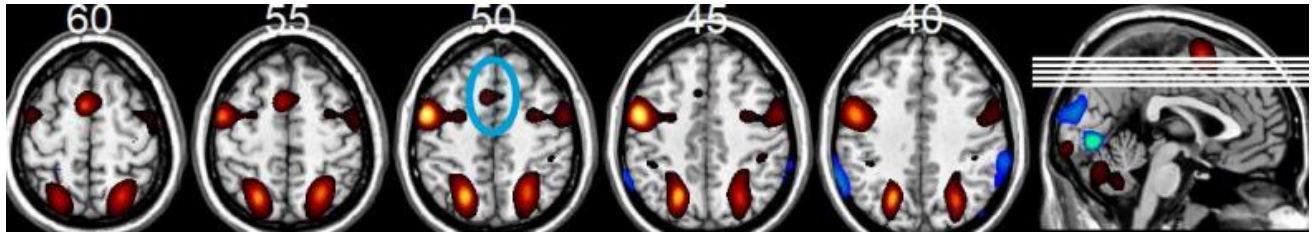
Component #2 (C2\_WM\_Pos\_79\_INIT\_1.21)



**Figure 6:** Raised eyebrows. Orientation: Coronal, Slices: 52,57,62,67,72 ( $z = 0.52$ ).



**Figure 7:** When I'm 64. Orientation: Axial, Slices: 126,136,146 ( $z = 0.37$ ).

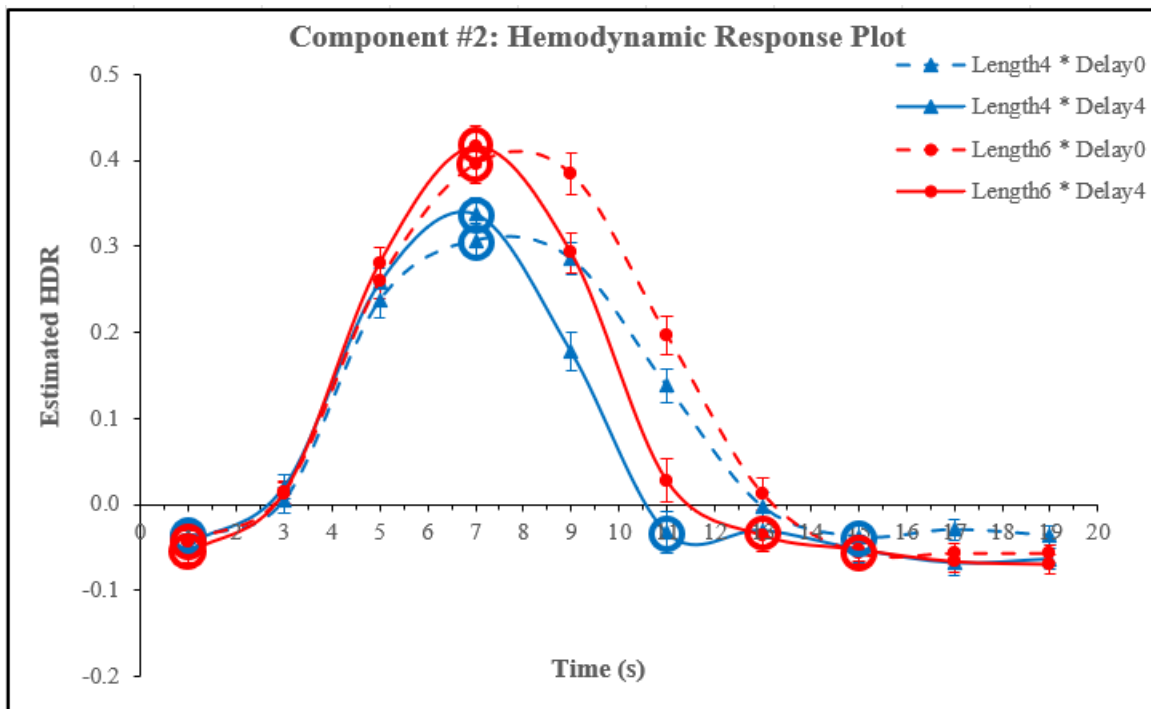


**Figure 8:** De Divina Proportione front guy. Orientation: Axial, Slices: 132,127,122,117,112 ( $z = 0.48$ ).

## Component #2: BTP Analysis

Component No.	Network	Group	Task Condition	Start	Peak	End	Sub-Zero Peak
2	INIT	Length4	Delay0	1	4	8	-
2	INIT	Length4	Delay4	1	4	6	-
2	INIT	Length6	Delay0	1	4	8	-
2	INIT	Length6	Delay4	1	4	7	-

## HDR Plot



**Figure 9:** Component #2 (C2\_WM\_Pos\_79\_INIT\_1.21) Varimax HDR for the Working Memory (WM) Task (Length4\_Length6) x Group (Delay0\_Delay4).

## SPSS Syntax

```
DO IF(Length4_Length6 = 1).  
compute INIT_4L_0D_start = 1.  
compute INIT_4L_0D_peak = 4.  
compute INIT_4L_0D_end = 8.  
compute INIT_4L_0D_subzero_peak = -88.  
compute INIT_4L_0D_start_pw = C2_Length4_Delay0_1.  
compute INIT_4L_0D_peak_pw = C2_Length4_Delay0_4.  
compute INIT_4L_0D_end_pw = C2_Length4_Delay0_8.  
compute INIT_4L_0D_subzero_peak_pw = -88.  
  
compute INIT_4L_4D_start = 1.  
compute INIT_4L_4D_peak = 4.  
compute INIT_4L_4D_end = 6.  
compute INIT_4L_4D_subzero_peak = -88.  
compute INIT_4L_4D_start_pw = C2_Length4_Delay4_1.  
compute INIT_4L_4D_peak_pw = C2_Length4_Delay4_4.  
compute INIT_4L_4D_end_pw = C2_Length4_Delay4_6.  
compute INIT_4L_4D_subzero_peak_pw = -88.  
  
compute INIT_4L_0D_up = mean(C2_Length4_Delay0_1 TO C2_Length4_Delay0_4).  
compute INIT_4L_4D_up = mean(C2_Length4_Delay4_1 TO C2_Length4_Delay4_4).  
compute INIT_4L_0D_down = mean(C2_Length4_Delay0_5 TO C2_Length4_Delay0_8).  
compute INIT_4L_4D_down = mean(C2_Length4_Delay4_5 TO C2_Length4_Delay4_6).  
  
compute INIT_4L_0D_start_to_peak = INIT_4L_0D_peak - INIT_4L_0D_start.  
compute INIT_4L_4D_start_to_peak = INIT_4L_4D_peak - INIT_4L_4D_start.  
compute INIT_4L_0D_peak_to_end = INIT_4L_0D_end - INIT_4L_0D_peak.
```

**compute** INIT\_4L\_4D\_peak\_to\_end = INIT\_4L\_4D\_end - INIT\_4L\_4D\_peak.  
**compute** INIT\_4L\_0D\_slope\_to\_suppress = INIT\_4L\_0D\_subzero\_peak - 1.  
**compute** INIT\_4L\_4D\_slope\_to\_suppress = INIT\_4L\_4D\_subzero\_peak - INIT\_4L\_4D\_end.  
**EXECUTE.**

**ELSE IF** (Length4\_Length6 = 2).

**compute** INIT\_6L\_0D\_start = 1.  
**compute** INIT\_6L\_0D\_peak = 4.  
**compute** INIT\_6L\_0D\_end = 8.  
**compute** INIT\_6L\_0D\_subzero\_peak = -88.  
**compute** INIT\_6L\_0D\_start\_pw = C2\_Length6\_Delay0\_1.  
**compute** INIT\_6L\_0D\_peak\_pw = C2\_Length6\_Delay0\_4.  
**compute** INIT\_6L\_0D\_end\_pw = C2\_Length6\_Delay0\_8.  
**compute** INIT\_6L\_0D\_subzero\_peak\_pw = -88.

**compute** INIT\_6L\_4D\_start = 1.  
**compute** INIT\_6L\_4D\_peak = 4.  
**compute** INIT\_6L\_4D\_end = 7.  
**compute** INIT\_6L\_4D\_subzero\_peak = -88.  
**compute** INIT\_6L\_4D\_start\_pw = C2\_Length6\_Delay4\_1.  
**compute** INIT\_6L\_4D\_peak\_pw = C2\_Length6\_Delay4\_4.  
**compute** INIT\_6L\_4D\_end\_pw = C2\_Length6\_Delay4\_7.  
**compute** INIT\_6L\_4D\_subzero\_peak\_pw = -88.

**compute** INIT\_6L\_0D\_up = **mean**(C2\_Length6\_Delay0\_1 TO C2\_Length6\_Delay0\_4).  
**compute** INIT\_6L\_4D\_up = **mean**(C2\_Length6\_Delay4\_1 TO C2\_Length6\_Delay4\_4).  
**compute** INIT\_6L\_0D\_down = **mean**(C2\_Length6\_Delay0\_5 TO C2\_Length6\_Delay0\_8).  
**compute** INIT\_6L\_4D\_down = **mean**(C2\_Length6\_Delay4\_5 TO C2\_Length6\_Delay4\_7).

**compute** INIT\_6L\_0D\_start\_to\_peak = INIT\_6L\_0D\_peak - INIT\_6L\_0D\_start.  
**compute** INIT\_6L\_4D\_start\_to\_peak = INIT\_6L\_4D\_peak - INIT\_6L\_4D\_start.  
**compute** INIT\_6L\_0D\_peak\_to\_end = INIT\_6L\_0D\_end - INIT\_6L\_0D\_peak.  
**compute** INIT\_6L\_4D\_peak\_to\_end = INIT\_6L\_4D\_end - INIT\_6L\_4D\_peak.  
**compute** INIT\_6L\_0D\_slope\_to\_suppress = INIT\_6L\_0D\_subzero\_peak - INIT\_6L\_0D\_end.  
**compute** INIT\_6L\_4D\_slope\_to\_suppress = INIT\_6L\_4D\_subzero\_peak - INIT\_6L\_4D\_end.

**END IF.**

**EXECUTE.**

### **VARIABLE LABELS**

INIT\_4L\_0D\_start 'time bin closest to where activity begins to increase for the Length4\_Delay0 condition'

INIT\_4L\_0D\_peak 'time bin closest to HDR peak for the Length4\_Delay0 condition'

INIT\_4L\_0D\_end 'time bin closest to where HDR returns to baseline level for the Length4\_Delay0 condition'

INIT\_4L\_0D\_subzero\_peak 'time bin closest to maximum suppression for the Length4\_Delay0 condition'

INIT\_4L\_0D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length4\_Delay0 condition'

INIT\_4L\_0D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length4\_Delay0 condition'

INIT\_4L\_0D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length4\_Delay0 condition'

INIT\_4L\_0D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length4\_Delay0 condition'

INIT\_4L\_0D\_start\_to\_peak 'number of time bins from start to peak for Length4\_Delay0 condition'

INIT\_4L\_0D\_peak\_to\_end 'number of time bins from peak to end for Length4\_Delay0 condition'

INIT\_4L\_0D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length4\_Delay0 condition'

INIT\_4L\_4D\_start 'time bin closest to where activity begins to increase for the Length4\_Delay4 condition'

INIT\_4L\_4D\_peak 'time bin closest to HDR peak for the Length4\_Delay4 condition'

INIT\_4L\_4D\_end 'time bin closest to where HDR returns to baseline level for the Length4\_Delay4 condition'

INIT\_4L\_4D\_subzero\_peak 'time bin closest to maximum suppression for the Length4\_Delay4 condition'

INIT\_4L\_4D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length4\_Delay4 condition'

INIT\_4L\_4D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length4\_Delay4 condition'

INIT\_4L\_4D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length4\_Delay4 condition'

INIT\_4L\_4D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length4\_Delay4 condition'

INIT\_4L\_4D\_start\_to\_peak 'number of time bins from start to peak for Length4\_Delay4 condition'

INIT\_4L\_4D\_peak\_to\_end 'number of time bins from peak to end for Length4\_Delay4 condition'

INIT\_4L\_4D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length4\_Delay4 condition'

INIT\_6L\_0D\_start 'time bin closest to where activity begins to increase for the Length6\_Delay0 condition'

INIT\_6L\_0D\_peak 'time bin closest to HDR peak for the Length6\_Delay0 condition'

INIT\_6L\_0D\_end 'time bin closest to where HDR returns to baseline level for the Length6\_Delay0 condition'

INIT\_6L\_0D\_subzero\_peak 'time bin closest to maximum suppression for the Length6\_Delay0 condition'

INIT\_6L\_0D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length6\_Delay0 condition'

INIT\_6L\_0D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length6\_Delay0 condition'



INIT\_6L\_0D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length6\_Delay0 condition'

INIT\_6L\_0D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length6\_Delay0 condition'

INIT\_6L\_0D\_start\_to\_peak 'number of time bins from start to peak for Length6\_Delay0 condition'

INIT\_6L\_0D\_peak\_to\_end 'number of time bins from peak to end for Length6\_Delay0 condition'

INIT\_6L\_0D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length6\_Delay0 condition'

INIT\_6L\_4D\_start 'time bin closest to where activity begins to increase for the Length6\_Delay4 condition'

INIT\_6L\_4D\_peak 'time bin closest to HDR peak for the Length6\_Delay4 condition'

INIT\_6L\_4D\_end 'time bin closest to where HDR returns to baseline level for the Length6\_Delay4 condition'

INIT\_6L\_4D\_subzero\_peak 'time bin closest to maximum suppression for the Length6\_Delay4 condition'

INIT\_6L\_4D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length6\_Delay4 condition'

INIT\_6L\_4D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length6\_Delay4 condition'

INIT\_6L\_4D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length6\_Delay4 condition'

INIT\_6L\_4D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length6\_Delay4 condition'

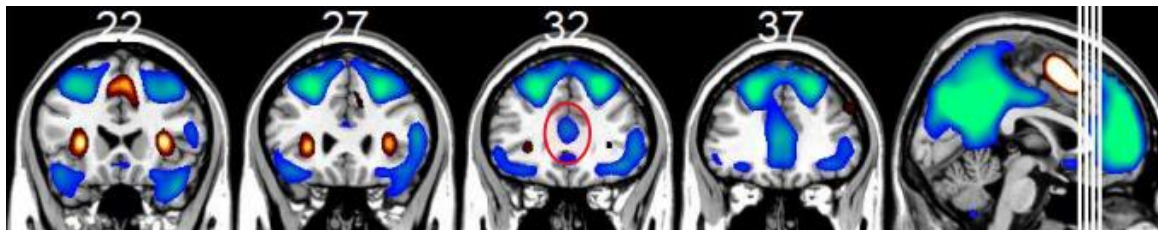
INIT\_6L\_4D\_start\_to\_peak 'number of time bins from start to peak for Length6\_Delay4 condition'

INIT\_6L\_4D\_peak\_to\_end 'number of time bins from peak to end for Length6\_Delay4 condition'

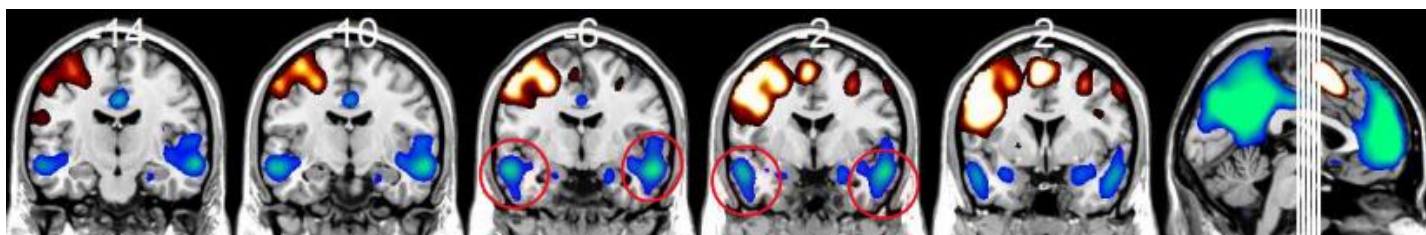
INIT\_6L\_4D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length6\_Delay4 condition'

**EXECUTE.**

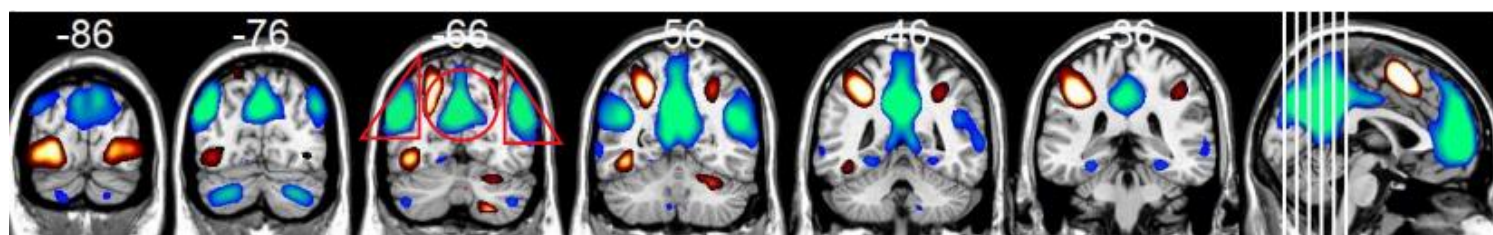
### Component #3 (C3\_WM\_Neg\_90\_TDMN\_1.50)



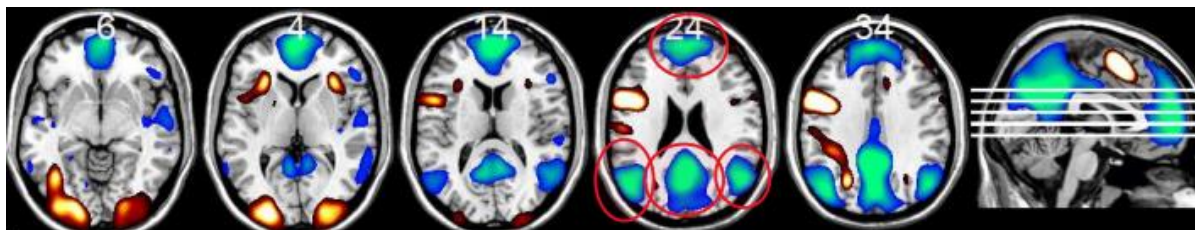
**Figure 10:** Snow Man Nose (Traditional). Orientation: Coronal, Slices: 148,153,158,163 ( $z = 1.49$ ).



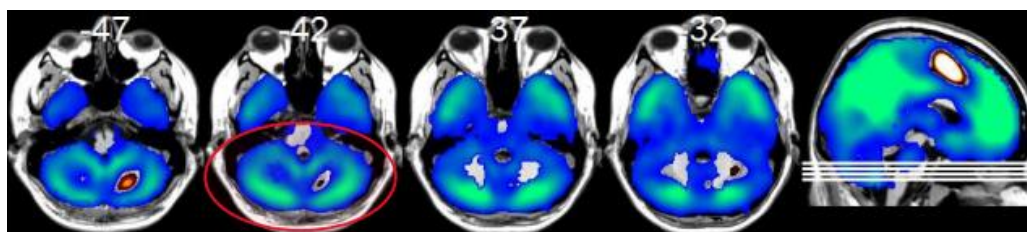
**Figure 11:** Medial Temporal Dots-Prominent (Traditional). Orientation: Coronal, Slices: 112,116,120,124,128 ( $z = 1.63$ ).



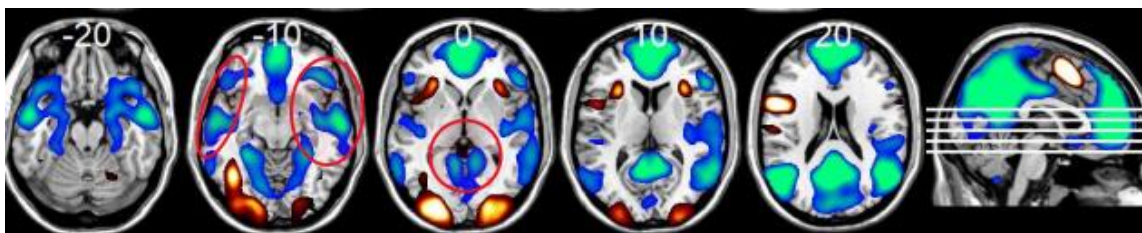
**Figure 12:** T-bird (Traditional). Orientation: Coronal, Slices: 40,50,60,70,80,90 ( $z = 1.51$ ).



**Figure 13:** Tripod (Traditional). Orientation: Axial, Slices: 66,76,86,96,106 ( $z = 1.58$ ).



**Figure 14:** Mandibles (Traditional). Orientation: Axial, Slices: 25,30,35,40 ( $z = 1.47$ ).

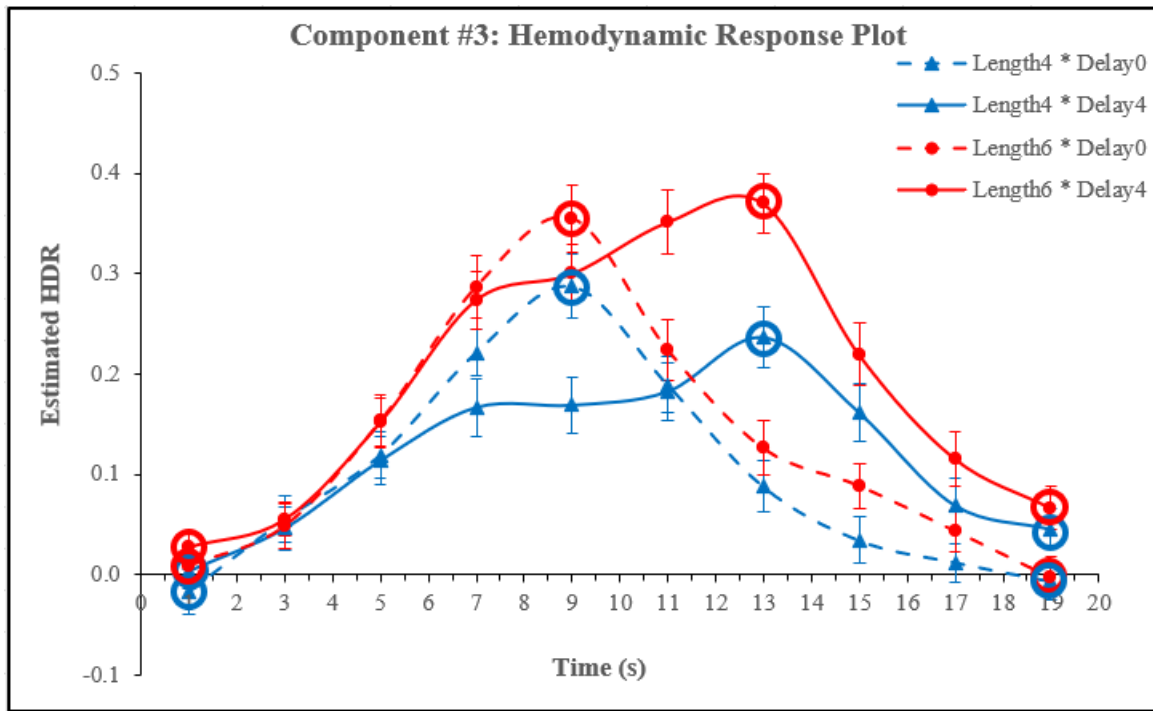


**Figure 15:** *Drooping Angel Wings-Muted (Traditional).* Orientation: Axial,  
Slices: 52,62,72,82,92 ( $z = 1.44$ ).

### Component #3: BTP Analysis

Component No.	Network	Group	Task Condition	Start	Peak	End	Sub-Zero Peak
3	TDMN	Length4	Delay0	1	5	10	-
3	TDMN	Length4	Delay4	1	7	10	-
3	TDMN	Length6	Delay0	1	5	10	-
3	TDMN	Length6	Delay4	1	7	10	-

### HDR Plot



**Figure 16:** Component #3 (C3\_WM\_Neg\_90\_TDMN\_1.50) Varimax HDR for the Working Memory (WM) Task (Length4\_Length6) x Group (Delay0\_Delay4).

## SPSS Syntax

```
compute TDMN_4L_0D_start = 1.
compute TDMN_4L_0D_peak = 5.
compute TDMN_4L_0D_end = 10.
compute TDMN_4L_0D_subzero_peak = -88.
compute TDMN_4L_0D_start_pw = C3_Length4_Delay0_1.
compute TDMN_4L_0D_peak_pw = C3_Length4_Delay0_5.
compute TDMN_4L_0D_end_pw = C3_Length4_Delay0_10.
compute TDMN_4L_0D_subzero_peak_pw = -88.

compute TDMN_4L_4D_start = 1.
compute TDMN_4L_4D_peak = 7.
compute TDMN_4L_4D_end = 10.
compute TDMN_4L_4D_subzero_peak = -88.
compute TDMN_4L_4D_start_pw = C3_Length4_Delay4_1.
compute TDMN_4L_4D_peak_pw = C3_Length4_Delay4_7.
compute TDMN_4L_4D_end_pw = C3_Length4_Delay4_10.
compute TDMN_4L_4D_subzero_peak_pw = -88.

compute TDMN_4L_0D_up = mean(C3_Length4_Delay0_1 TO C3_Length4_Delay0_5).
compute TDMN_4L_4D_up = mean(C3_Length4_Delay4_1 TO C3_Length4_Delay4_7).
compute TDMN_4L_0D_down = mean(C3_Length4_Delay0_6 TO C3_Length4_Delay0_10).
compute TDMN_4L_4D_down = mean(C3_Length4_Delay4_8 TO C3_Length4_Delay4_10).

compute TDMN_4L_0D_start_to_peak = TDMN_4L_0D_peak - TDMN_4L_0D_start.
compute TDMN_4L_4D_start_to_peak = TDMN_4L_4D_peak - TDMN_4L_4D_start.
compute TDMN_4L_0D_peak_to_end = TDMN_4L_0D_end - TDMN_4L_0D_peak.
compute TDMN_4L_4D_peak_to_end = TDMN_4L_4D_end - TDMN_4L_4D_peak.
```

**compute** TDMN\_4L\_0D\_slope\_to\_suppress = -88.

**compute** TDMN\_4L\_4D\_slope\_to\_suppress = -88.

**compute** TDMN\_6L\_0D\_start = 1.

**compute** TDMN\_6L\_0D\_peak = 5.

**compute** TDMN\_6L\_0D\_end = 10.

**compute** TDMN\_6L\_0D\_subzero\_peak = -88.

**compute** TDMN\_6L\_0D\_start\_pw = C3\_Length6\_Delay0\_1.

**compute** TDMN\_6L\_0D\_peak\_pw = C3\_Length6\_Delay0\_5.

**compute** TDMN\_6L\_0D\_end\_pw = C3\_Length6\_Delay0\_10.

**compute** TDMN\_6L\_0D\_subzero\_peak\_pw = -88.

**compute** TDMN\_6L\_4D\_start = 1.

**compute** TDMN\_6L\_4D\_peak = 7.

**compute** TDMN\_6L\_4D\_end = 10.

**compute** TDMN\_6L\_4D\_subzero\_peak = -88.

**compute** TDMN\_6L\_4D\_start\_pw = C3\_Length6\_Delay4\_1.

**compute** TDMN\_6L\_4D\_peak\_pw = C3\_Length6\_Delay4\_7.

**compute** TDMN\_6L\_4D\_end\_pw = C3\_Length6\_Delay4\_10.

**compute** TDMN\_6L\_4D\_subzero\_peak\_pw = -88.

**compute** TDMN\_6L\_0D\_up = **mean**(C3\_Length6\_Delay0\_1 TO C3\_Length6\_Delay0\_5).

**compute** TDMN\_6L\_4D\_up = **mean**(C3\_Length6\_Delay4\_1 TO C3\_Length6\_Delay4\_7).

**compute** TDMN\_6L\_0D\_down = **mean**(C3\_Length6\_Delay0\_6 TO C3\_Length6\_Delay0\_10).

**compute** TDMN\_6L\_4D\_down = **mean**(C3\_Length6\_Delay4\_8 TO C3\_Length6\_Delay4\_10).

**compute** TDMN\_6L\_0D\_start\_to\_peak = TDMN\_6L\_0D\_peak - TDMN\_6L\_0D\_start.

**compute** TDMN\_6L\_4D\_start\_to\_peak = TDMN\_6L\_4D\_peak - TDMN\_6L\_4D\_start.



**compute** TDMN\_6L\_0D\_peak\_to\_end = TDMN\_6L\_0D\_end - TDMN\_6L\_0D\_peak.

**compute** TDMN\_6L\_4D\_peak\_to\_end = TDMN\_6L\_4D\_end - TDMN\_6L\_4D\_peak.

**compute** TDMN\_6L\_0D\_slope\_to\_suppress = -88.

**compute** TDMN\_6L\_4D\_slope\_to\_suppress = -88.

**END IF.**

**EXECUTE.**

### **VARIABLE LABELS**

TDMN\_4L\_0D\_start 'time bin closest to where activity begins to increase for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_peak 'time bin closest to HDR peak for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_end 'time bin closest to where HDR returns to baseline level for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_subzero\_peak 'time bin closest to maximum suppression for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length4\_Delay0 condition'

TDMN\_4L\_0D\_start\_to\_peak 'number of time bins from start to peak for Length4\_Delay0 condition'

TDMN\_4L\_0D\_peak\_to\_end 'number of time bins from peak to end for Length4\_Delay0 condition'

TDMN\_4L\_0D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length4\_Delay0 condition'

TDMN\_4L\_4D\_start 'time bin closest to where activity begins to increase for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_peak 'time bin closest to HDR peak for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_end 'time bin closest to where HDR returns to baseline level for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_subzero\_peak 'time bin closest to maximum suppression for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length4\_Delay4 condition'

TDMN\_4L\_4D\_start\_to\_peak 'number of time bins from start to peak for Length4\_Delay4 condition'

TDMN\_4L\_4D\_peak\_to\_end 'number of time bins from peak to end for Length4\_Delay4 condition'

TDMN\_4L\_4D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length4\_Delay4 condition'

TDMN\_6L\_0D\_start 'time bin closest to where activity begins to increase for the Length6\_Delay0 condition'

TDMN\_6L\_0D\_peak 'time bin closest to HDR peak for the Length6\_Delay0 condition'

TDMN\_6L\_0D\_end 'time bin closest to where HDR returns to baseline level for the Length6\_Delay0 condition'

TDMN\_6L\_0D\_subzero\_peak 'time bin closest to maximum suppression for the Length6\_Delay0 condition'

TDMN\_6L\_0D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length6\_Delay0 condition'

TDMN\_6L\_0D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length6\_Delay0 condition'



TDMN\_6L\_0D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length6\_Delay0 condition'

TDMN\_6L\_0D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length6\_Delay0 condition'

TDMN\_6L\_0D\_start\_to\_peak 'number of time bins from start to peak for Length6\_Delay0 condition'

TDMN\_6L\_0D\_peak\_to\_end 'number of time bins from peak to end for Length6\_Delay0 condition'

TDMN\_6L\_0D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length6\_Delay0 condition'

TDMN\_6L\_4D\_start 'time bin closest to where activity begins to increase for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_peak 'time bin closest to HDR peak for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_end 'time bin closest to where HDR returns to baseline level for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_subzero\_peak 'time bin closest to maximum suppression for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_start\_pw 'predictor weight for time bin closest to where activity begins to increase for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_peak\_pw 'predictor weight for time bin closest to HDR peak for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_end\_pw 'predictor weight for time bin closest to where HDR returns to baseline level for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_subzero\_peak\_pw 'predictor weight for time bin closest to maximum suppression for the Length6\_Delay4 condition'

TDMN\_6L\_4D\_start\_to\_peak 'number of time bins from start to peak for Length6\_Delay4 condition'

TDMN\_6L\_4D\_peak\_to\_end 'number of time bins from peak to end for Length6\_Delay4 condition'

TDMN\_6L\_4D\_slope\_to\_suppress 'number of time bins from first time bin to subzero peak for Length6\_Delay4 condition'

**EXECUTE.**