

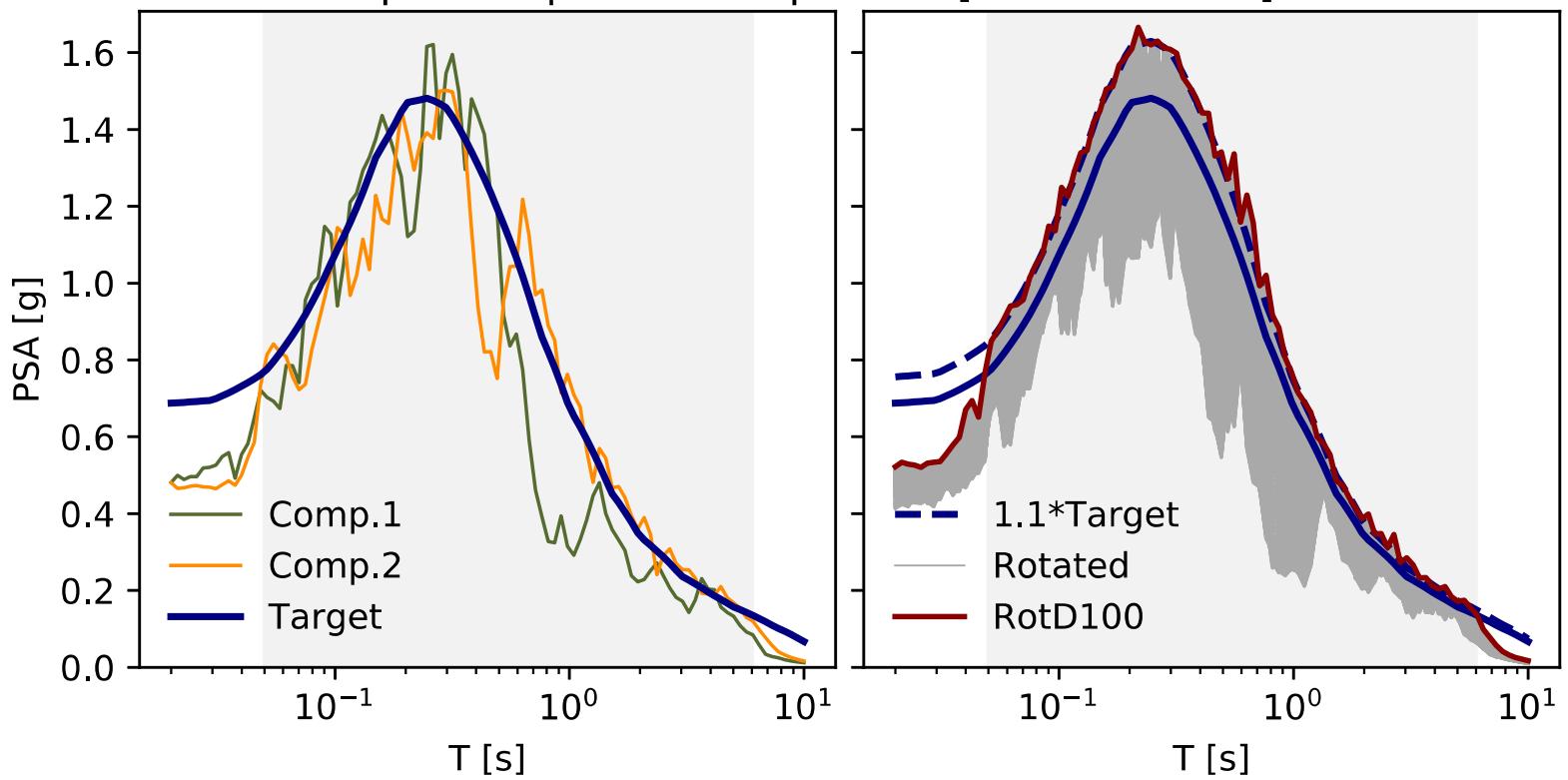
## **Digital Appendix for:**

### **Response spectral matching of horizontal ground motion components to an orientation-independent spectrum (RotDnn)**

*Luis A. Montejo*

#### **A4. Results obtained using the proposed methodology and the site-specific spectrum as target**

### Response Spectra Comparison [NGA.RSN.164]

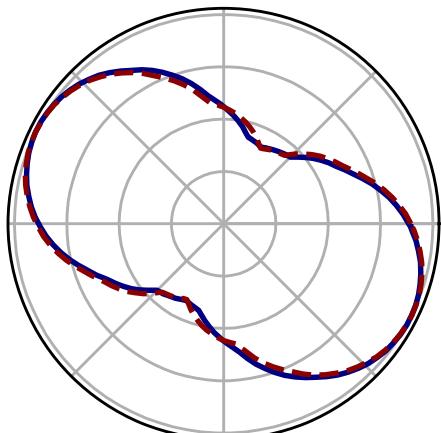
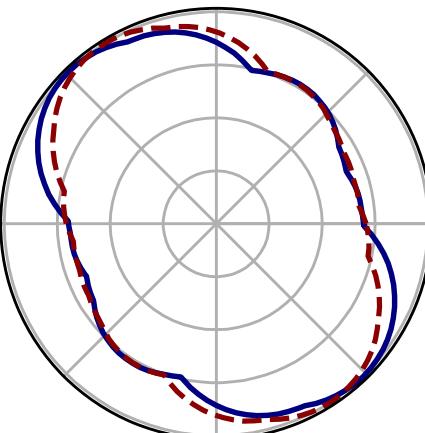
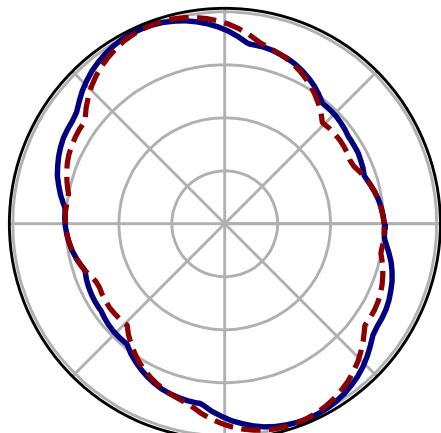


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.164]

T = 0.1 s

T = 0.2 s

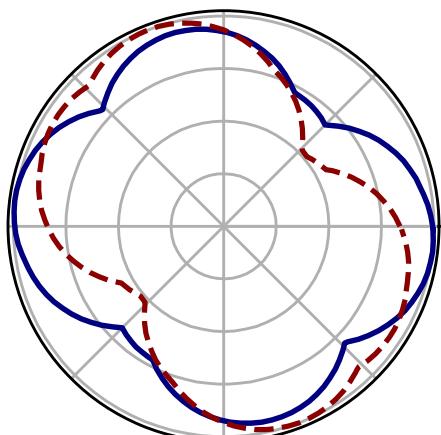
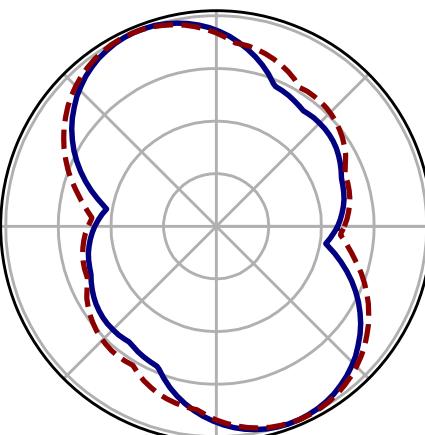
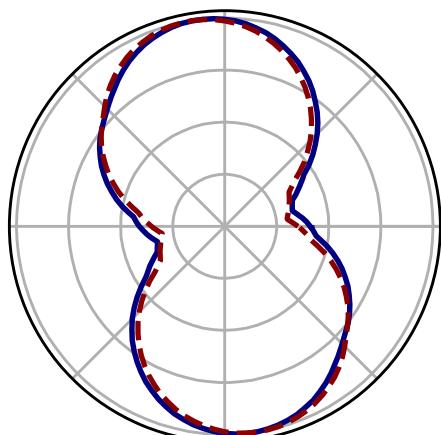
T = 0.5 s



T = 1.0 s

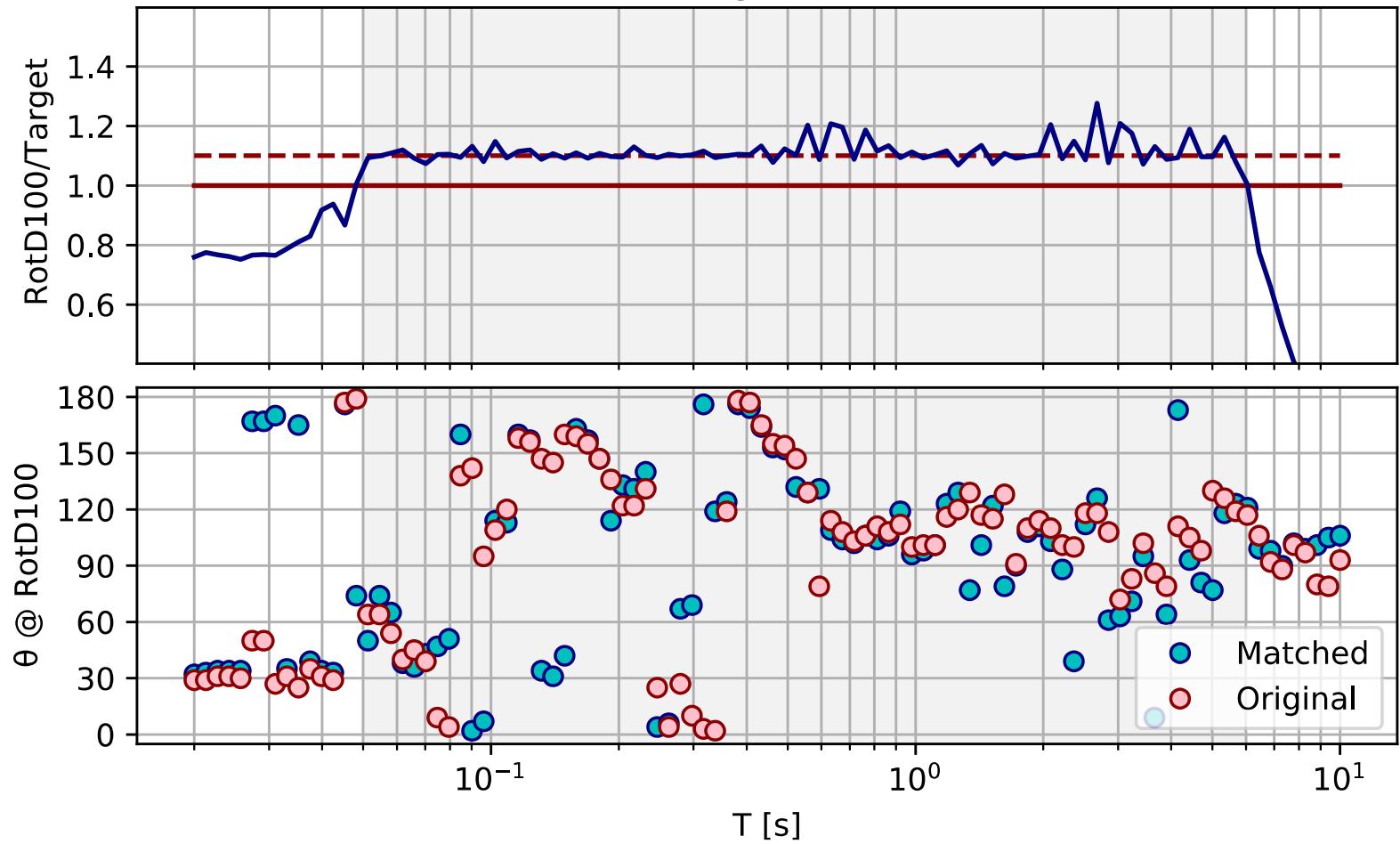
T = 2.0 s

T = 4.2 s

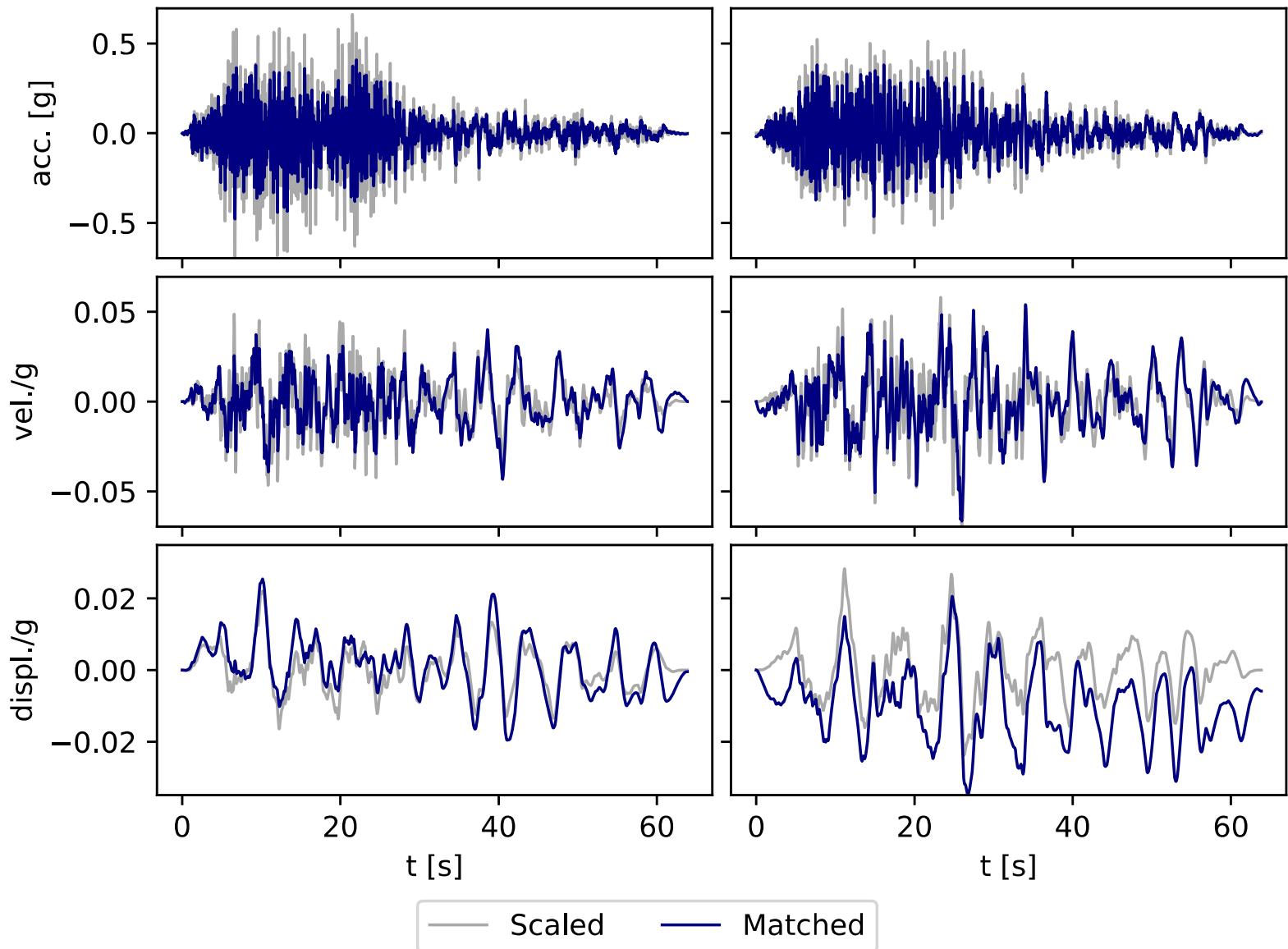


— Matched    - - - Original

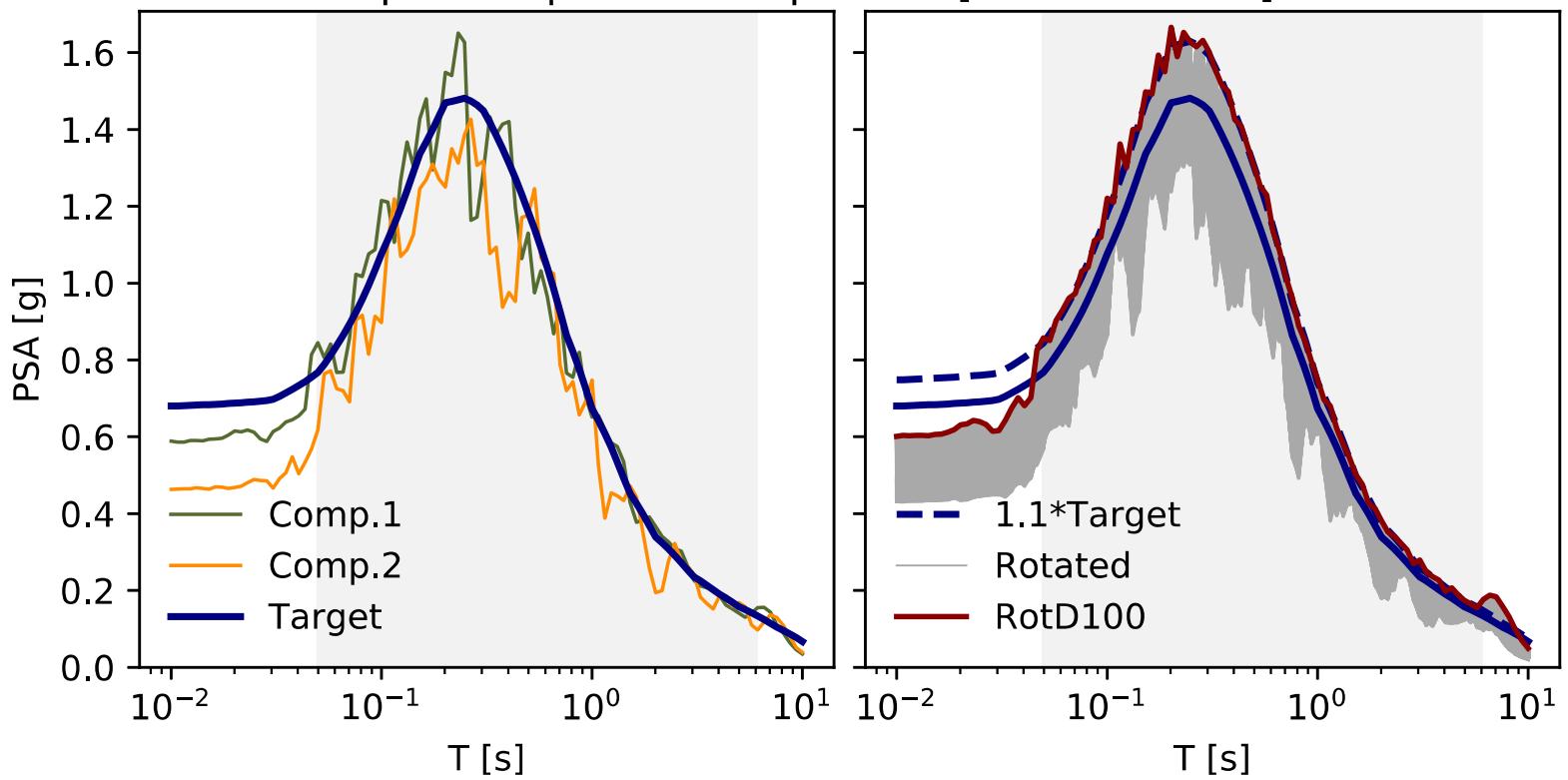
RotD100 ratios and angles [NGA.RSN.164]



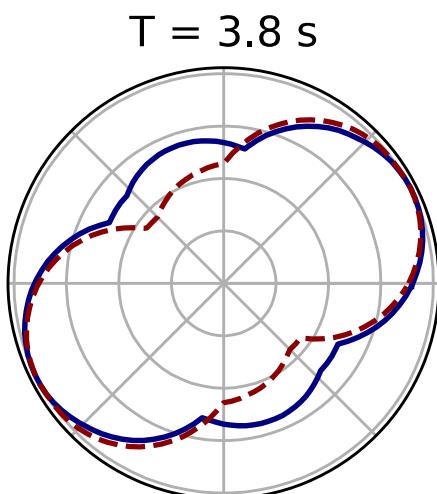
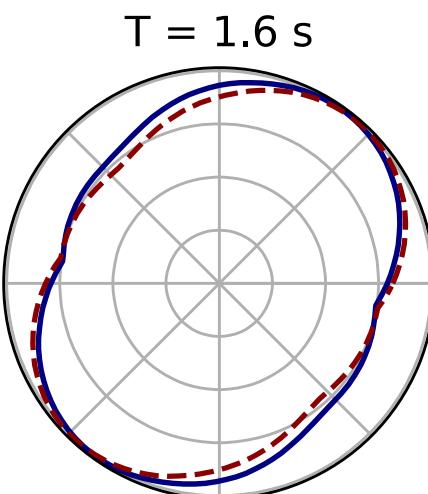
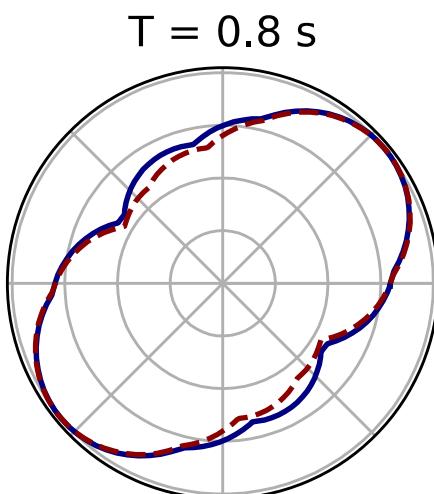
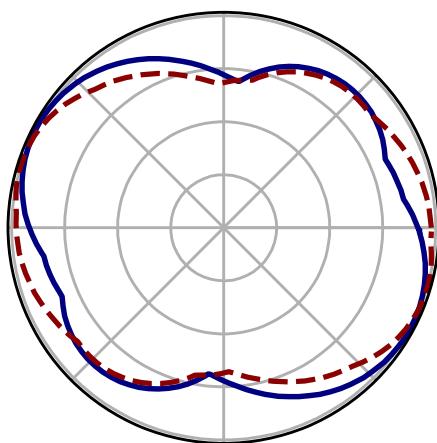
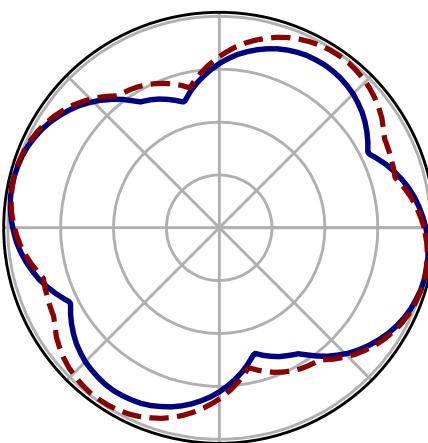
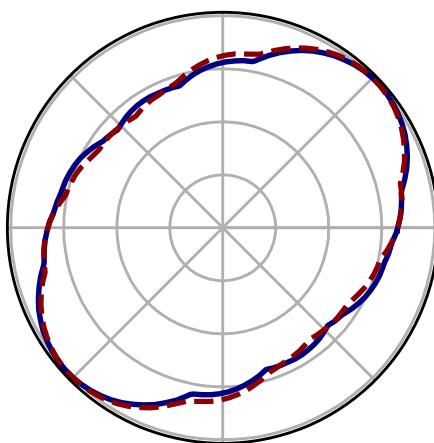
Time Histories Comparison [NGA.RSN.164]



### Response Spectra Comparison [NGA.RSN.175]

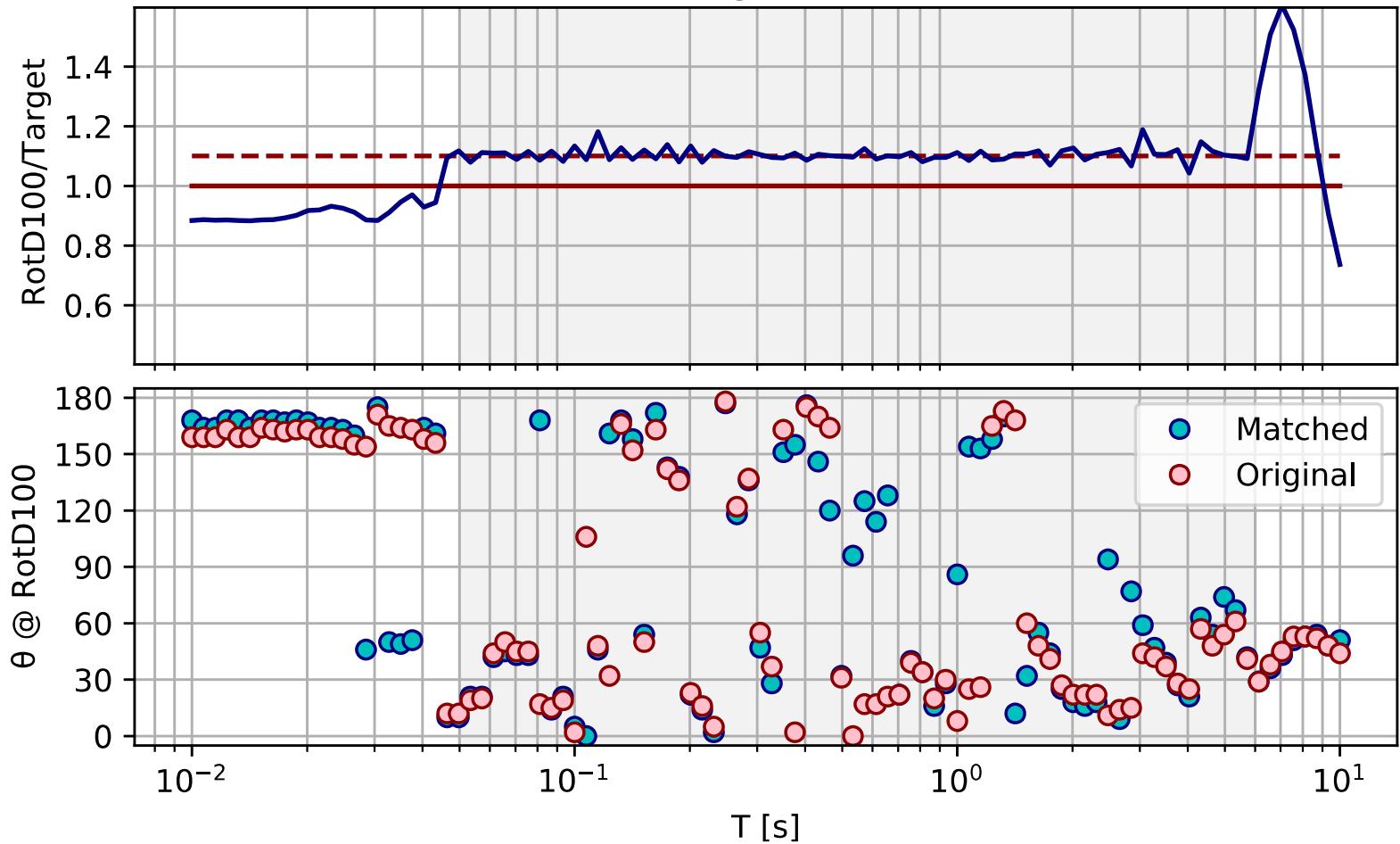


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.175]  
 $T = 0.1$  s       $T = 0.1$  s       $T = 0.4$  s

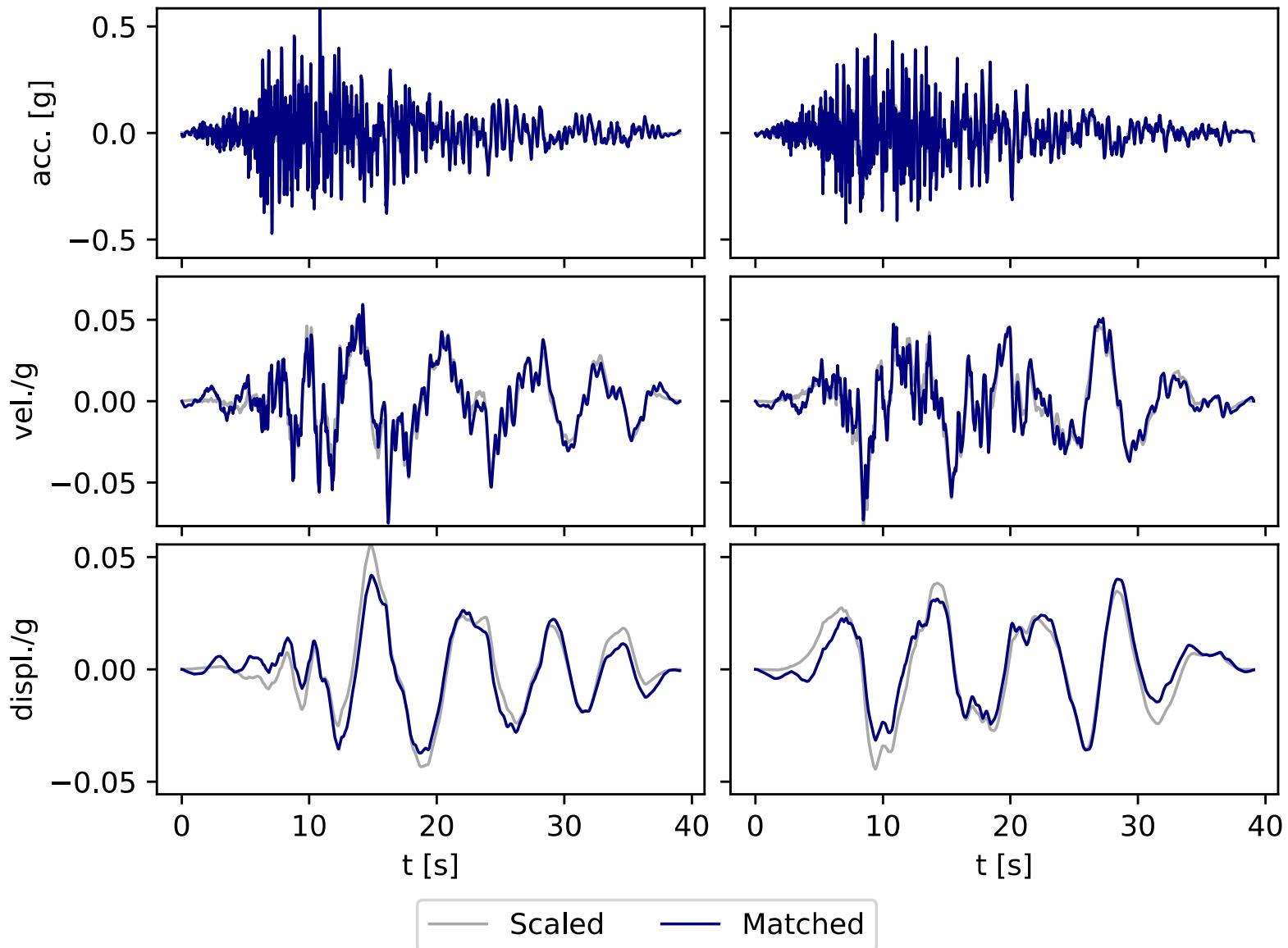


— Matched    - - Original

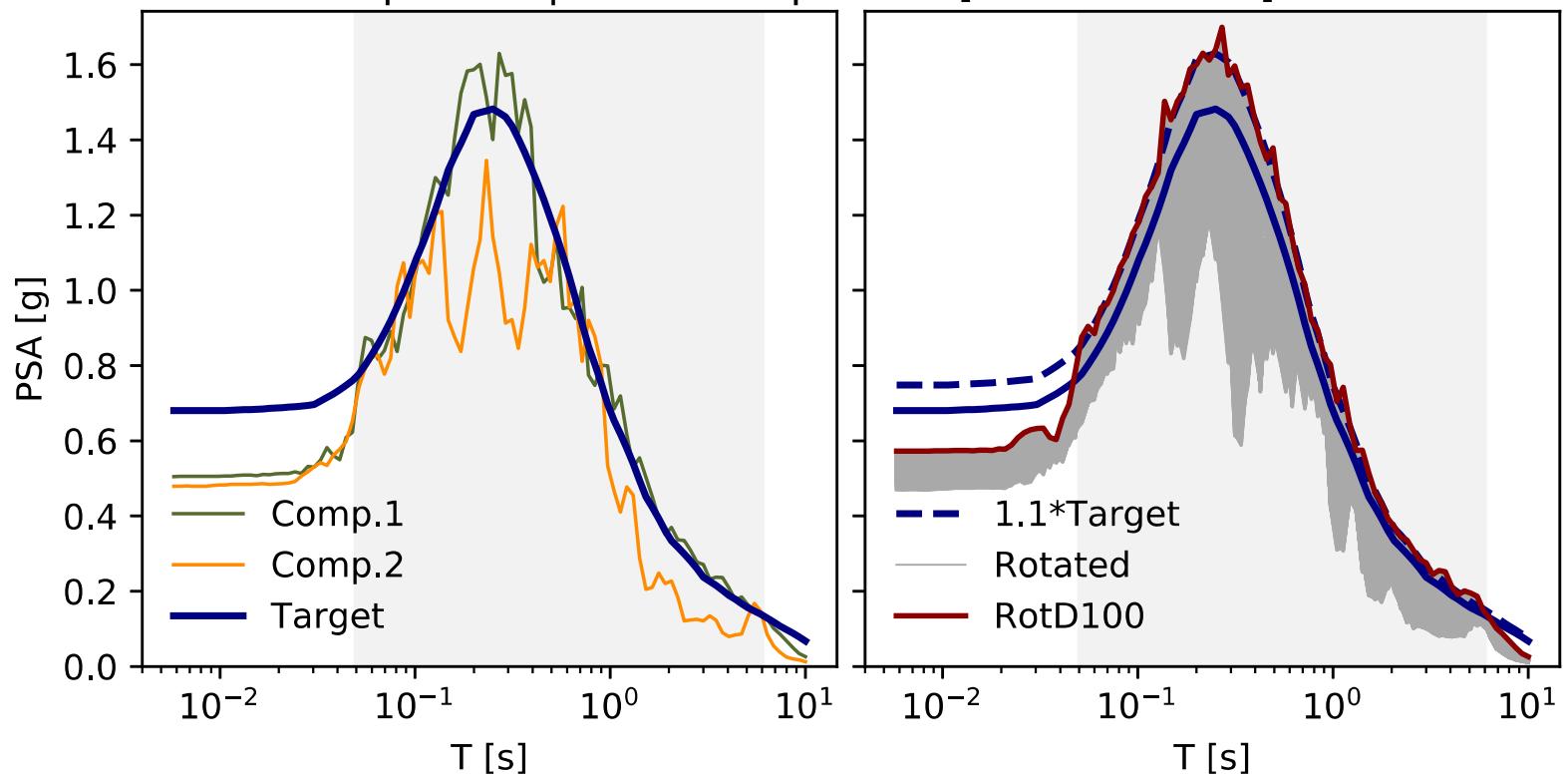
RotD100 ratios and angles [NGA.RSN.175]



Time Histories Comparison [NGA.RSN.175]



Response Spectra Comparison [NGA.RSN.302]

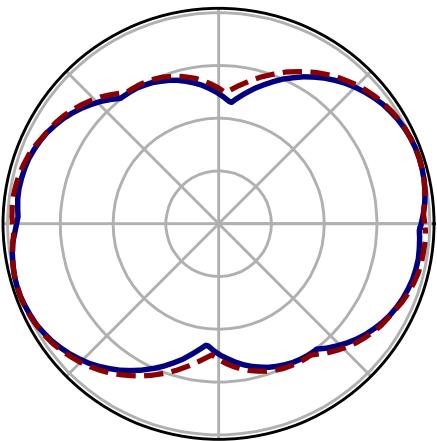
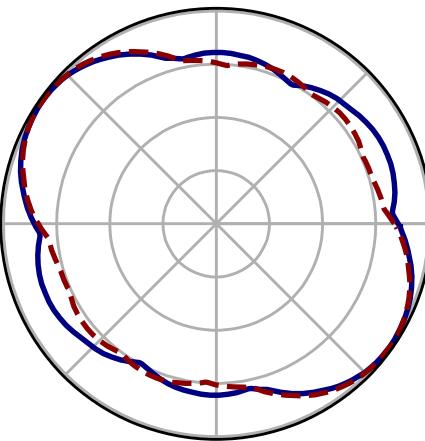
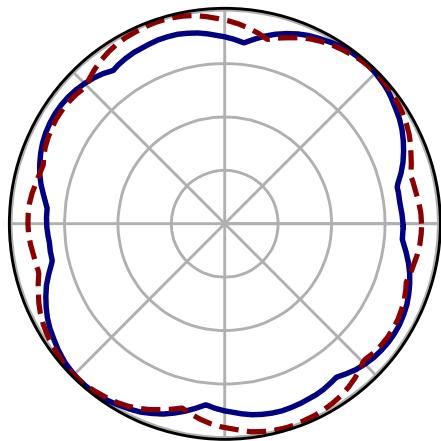


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.302]

T = 0.0 s

T = 0.1 s

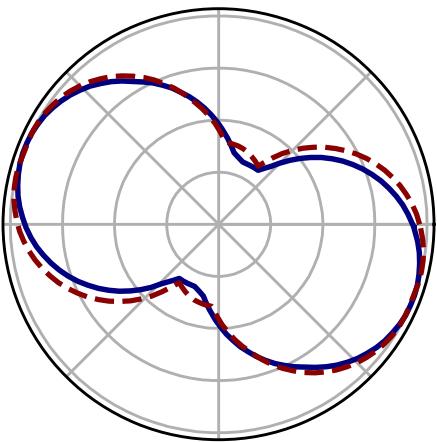
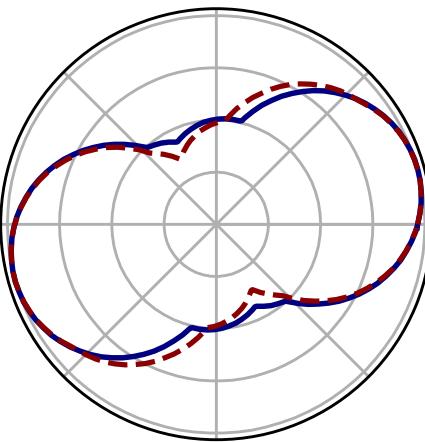
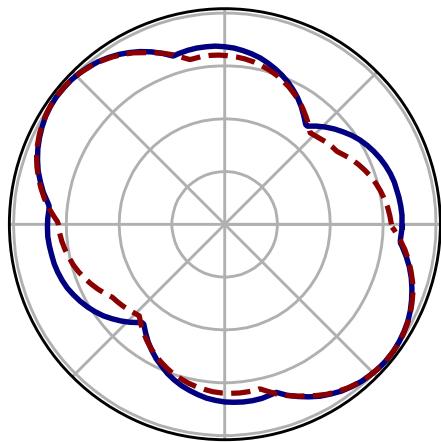
T = 0.3 s



T = 0.6 s

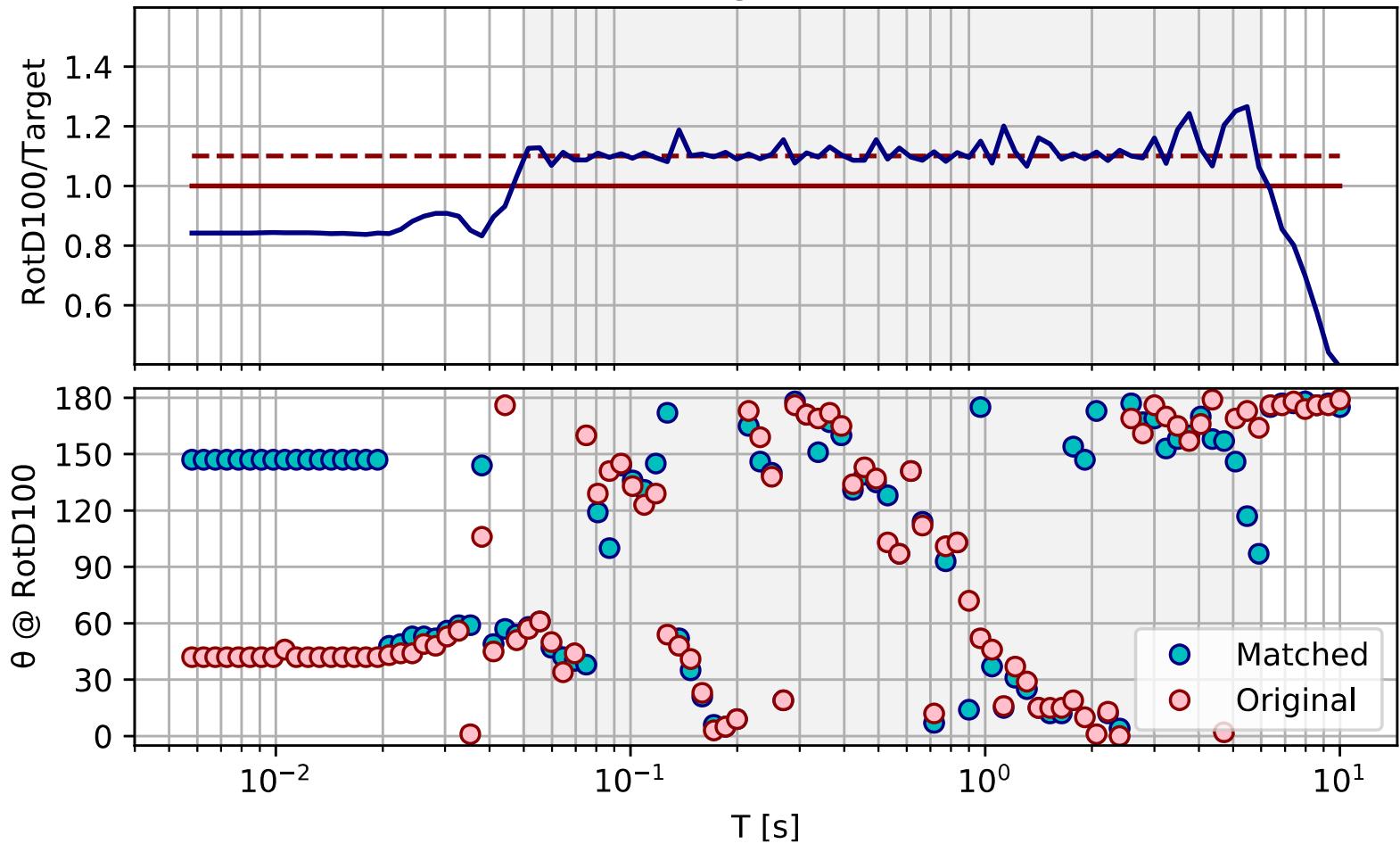
T = 1.4 s

T = 3.5 s

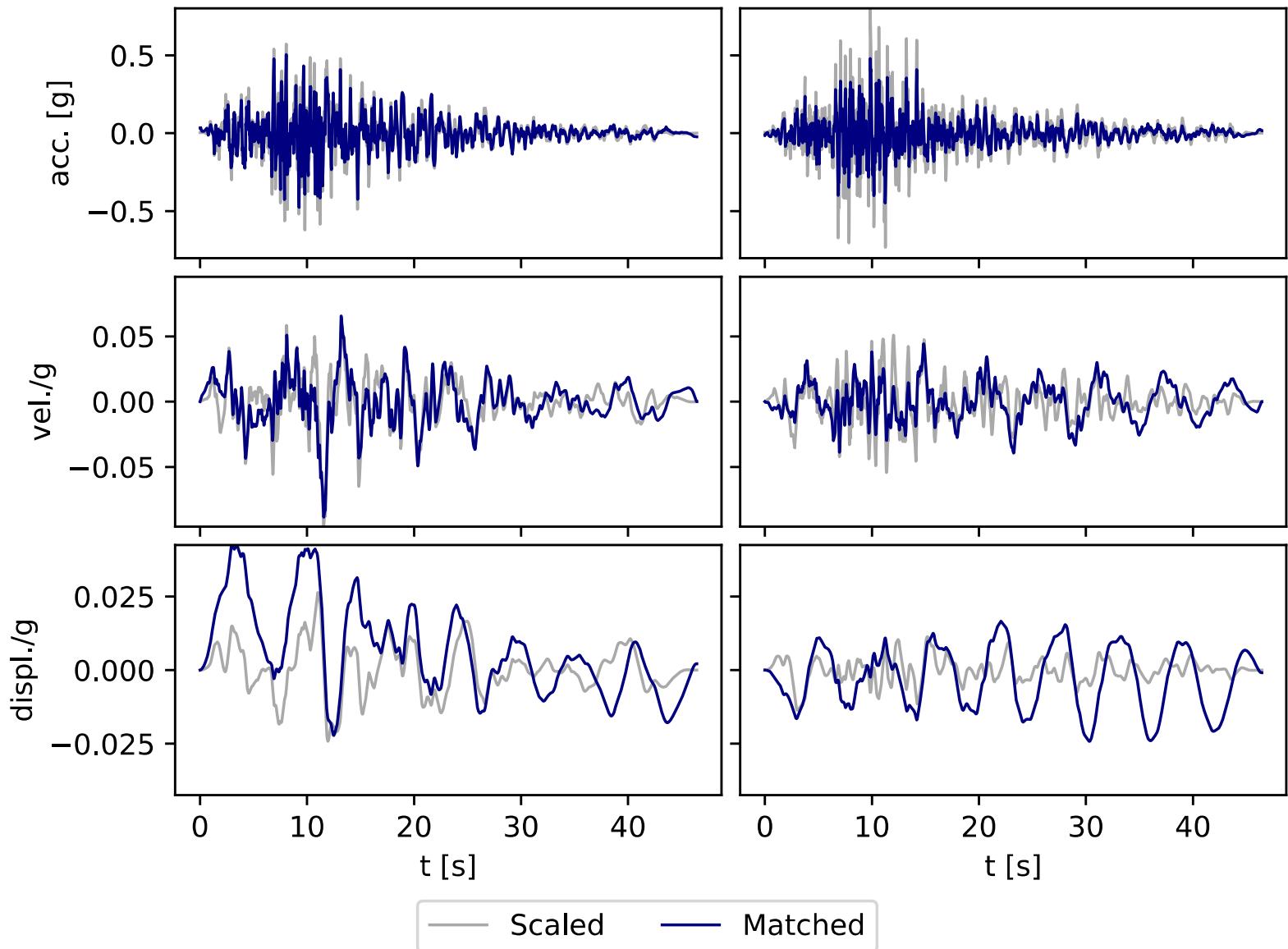


— Matched    - - - Original

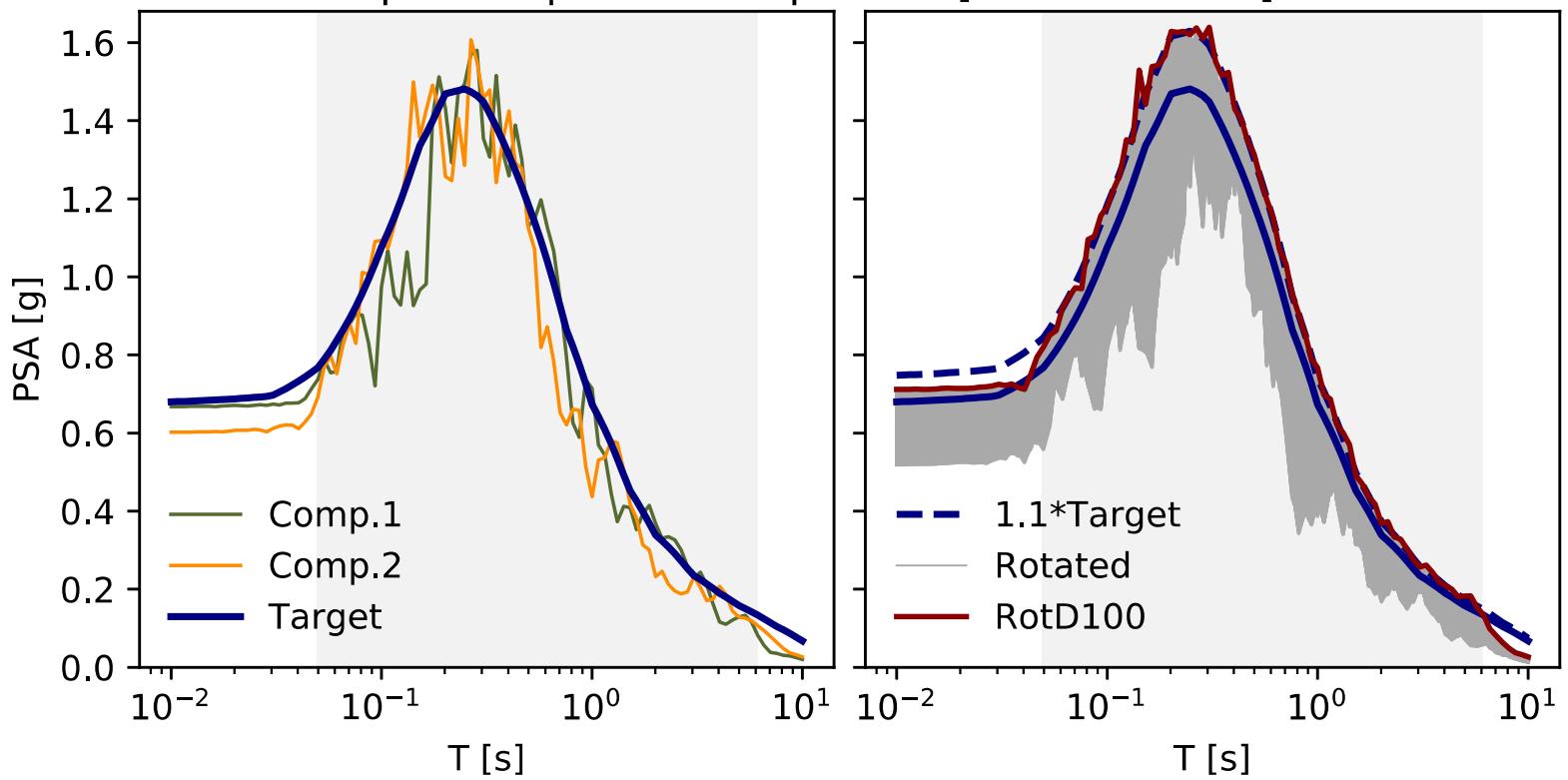
### RotD100 ratios and angles [NGA.RSN.302]



Time Histories Comparison [NGA.RSN.302]



### Response Spectra Comparison [NGA.RSN.761]

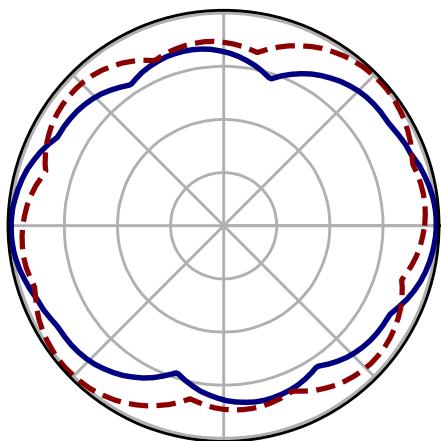
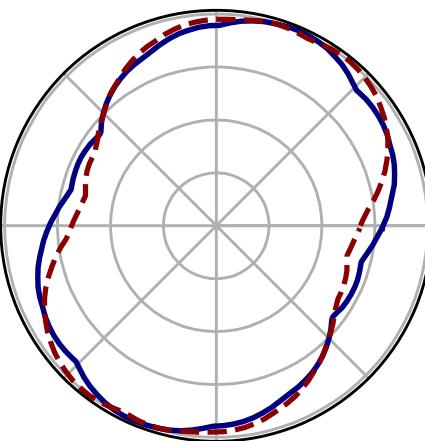
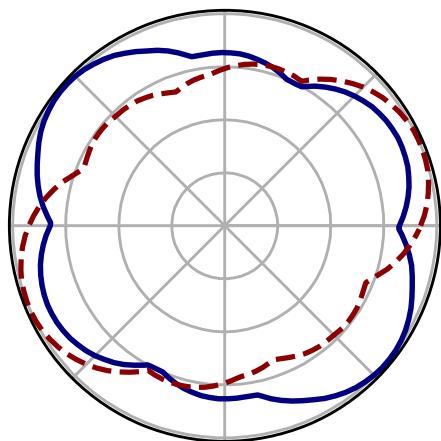


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.761]

T = 0.1 s

T = 0.1 s

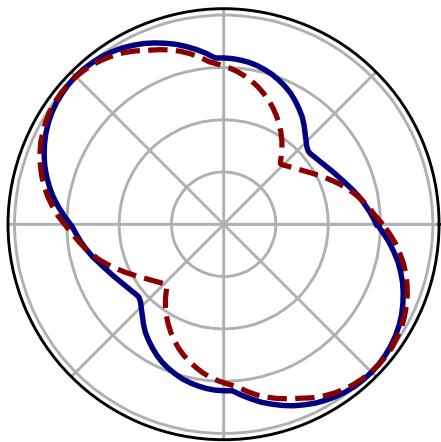
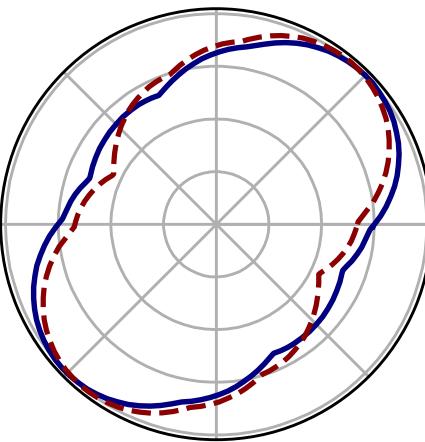
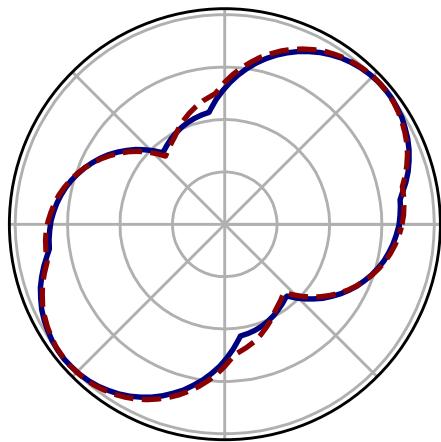
T = 0.4 s



T = 0.8 s

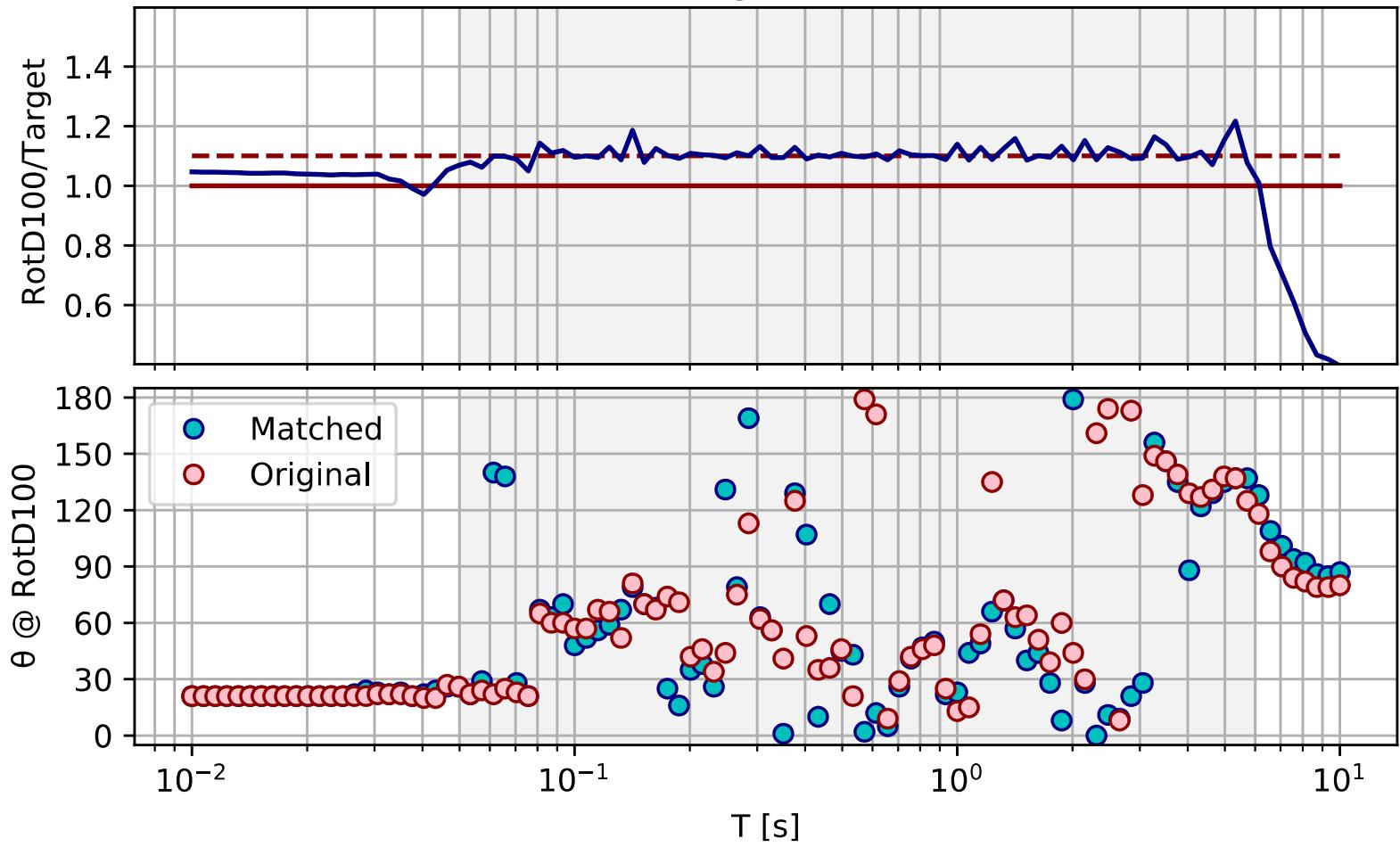
T = 1.6 s

T = 3.8 s

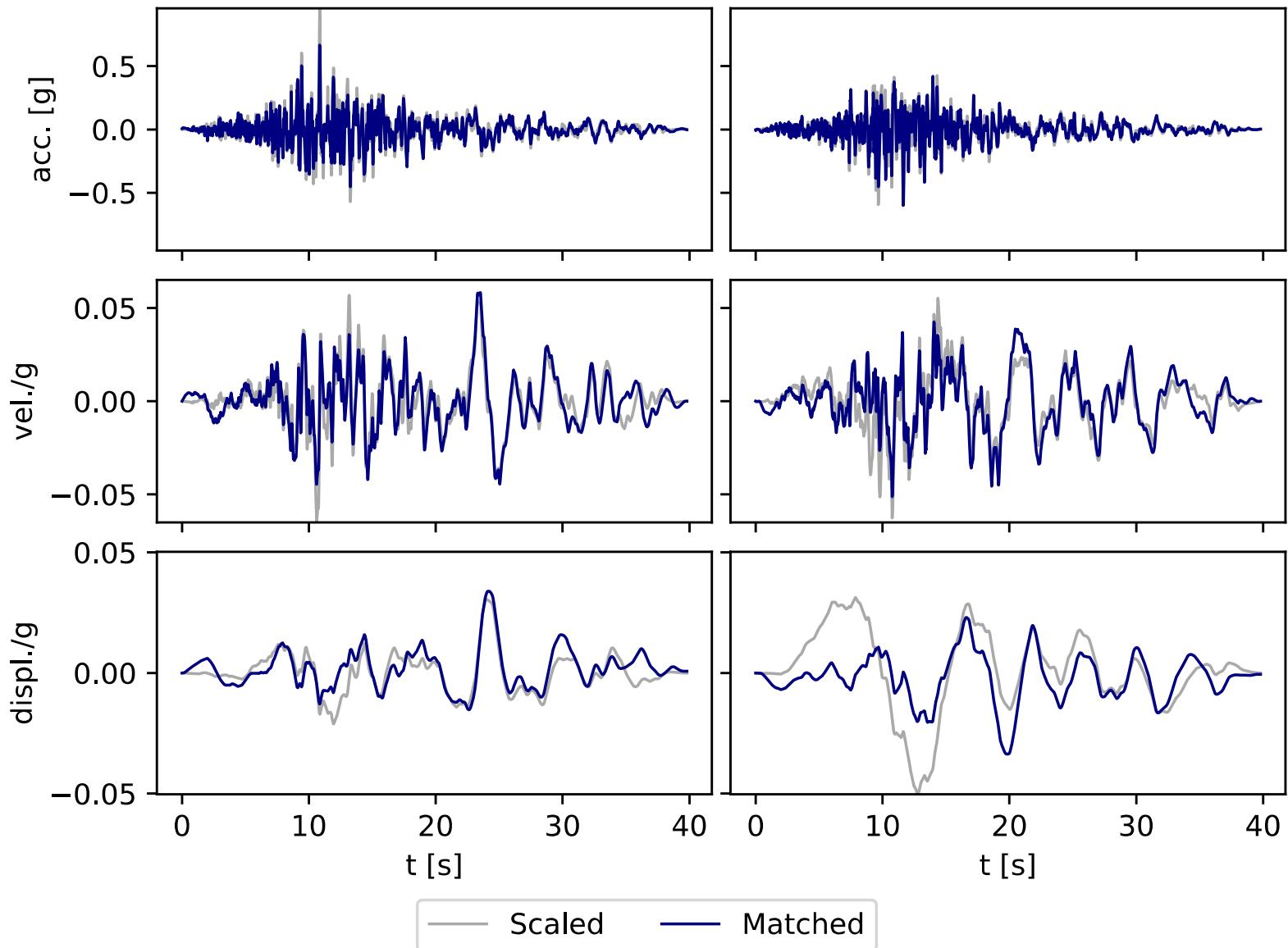


— Matched    - - Original

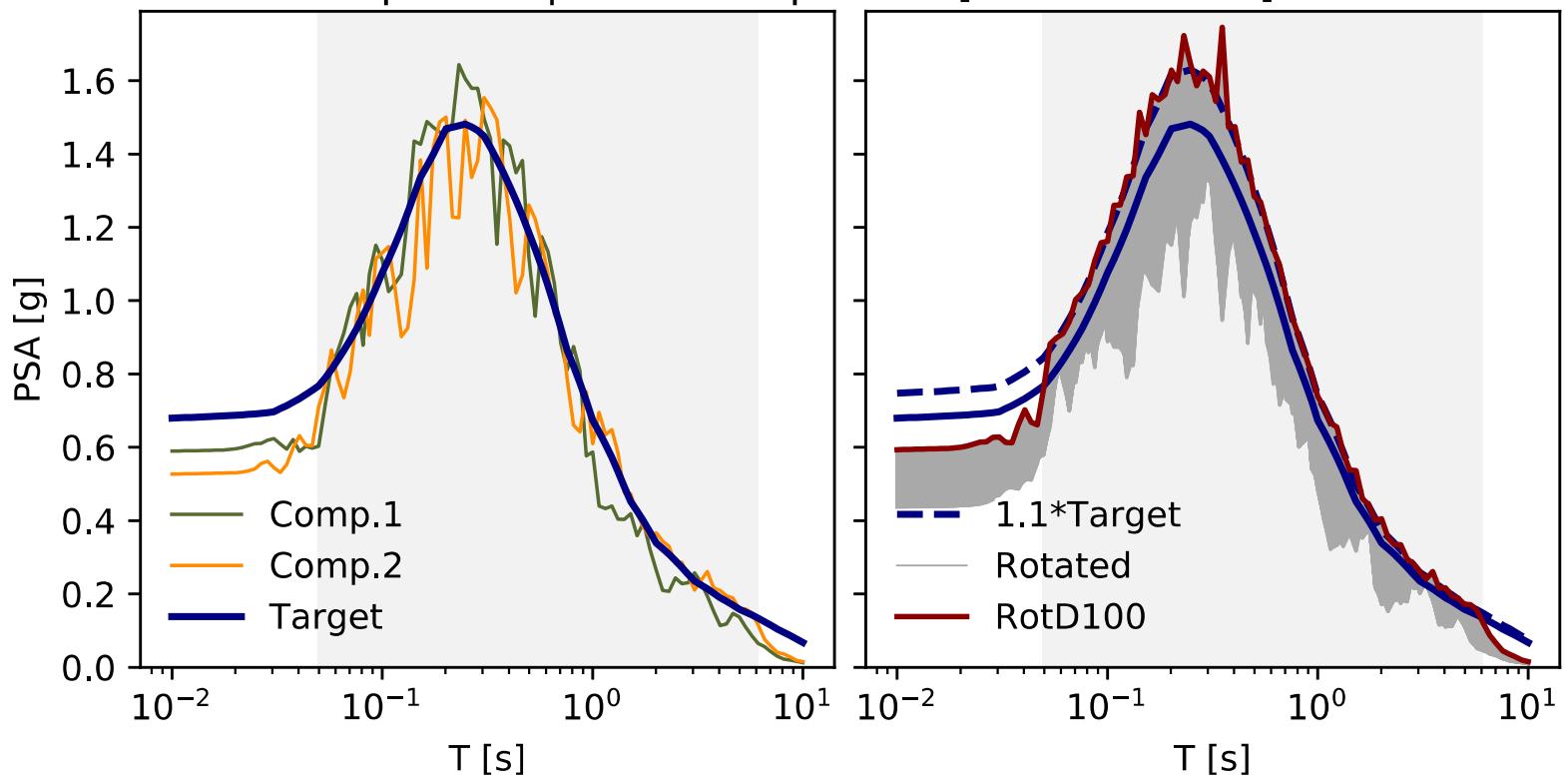
RotD100 ratios and angles [NGA.RSN.761]



Time Histories Comparison [NGA.RSN.761]



### Response Spectra Comparison [NGA.RSN.882]

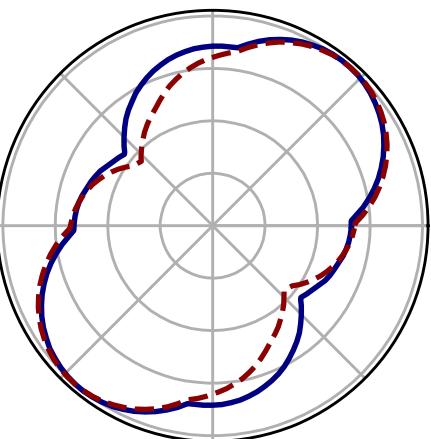
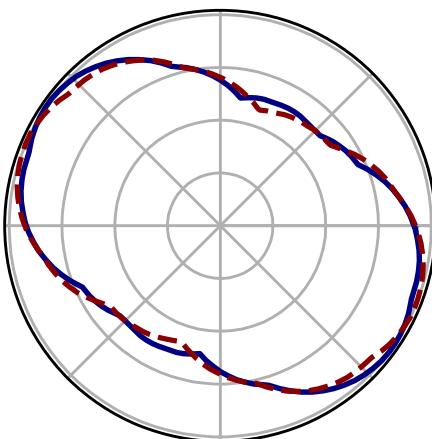
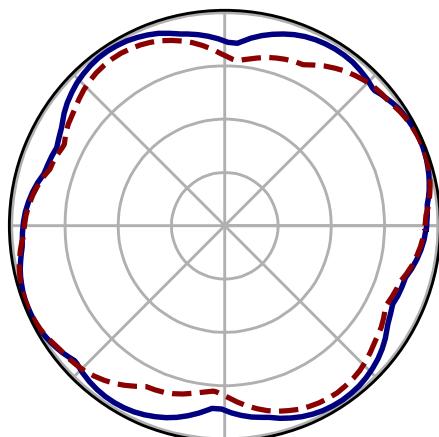


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.882]

T = 0.1 s

T = 0.1 s

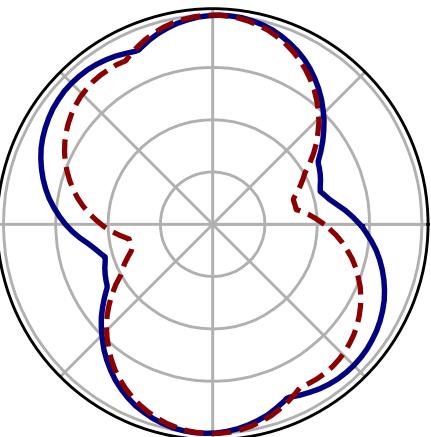
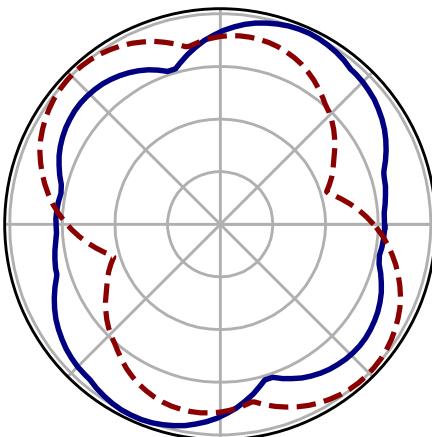
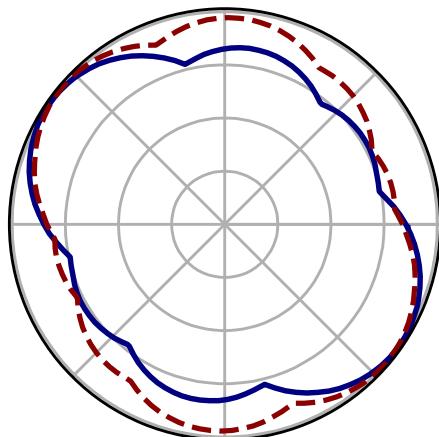
T = 0.4 s



T = 0.8 s

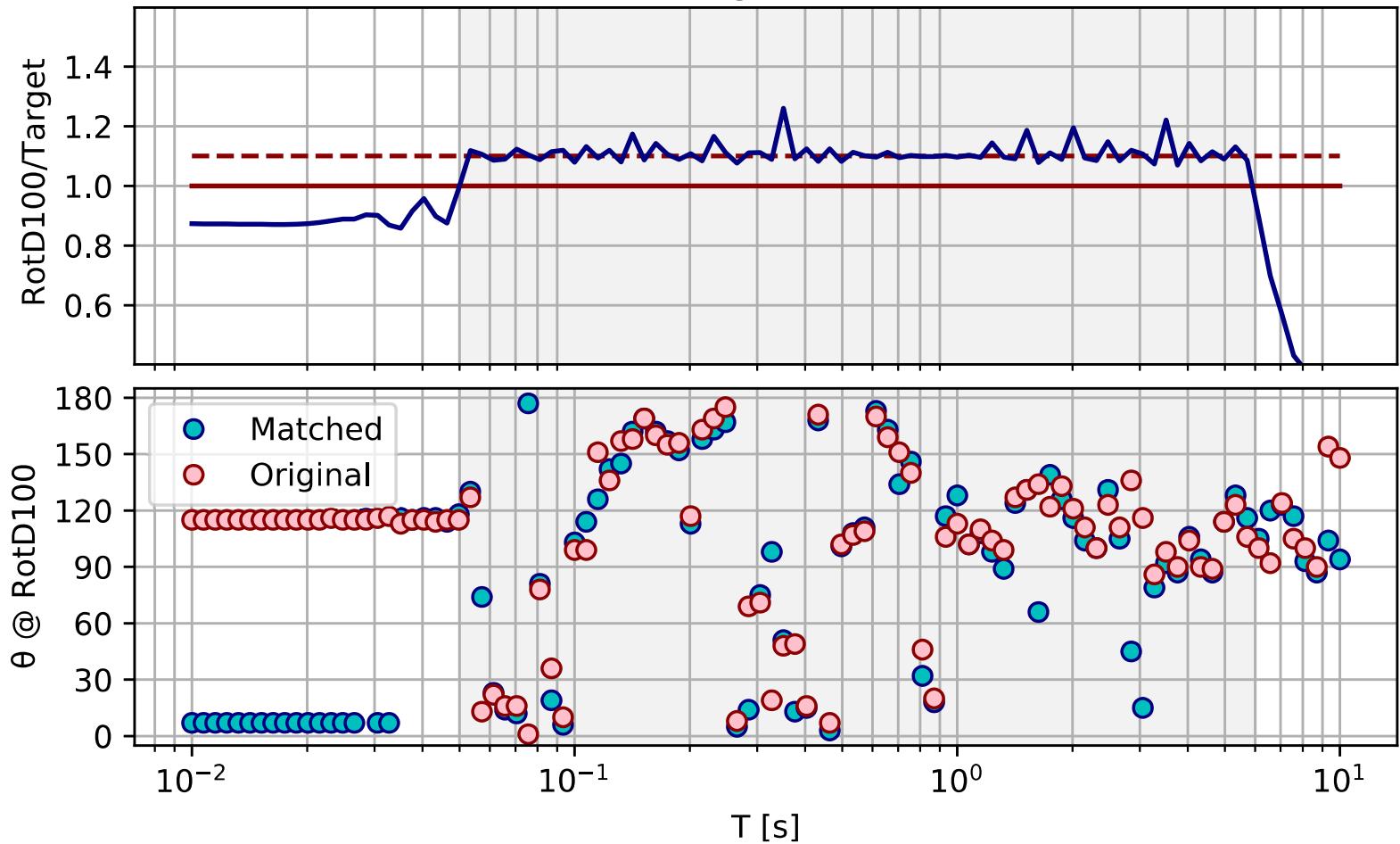
T = 1.6 s

T = 3.8 s

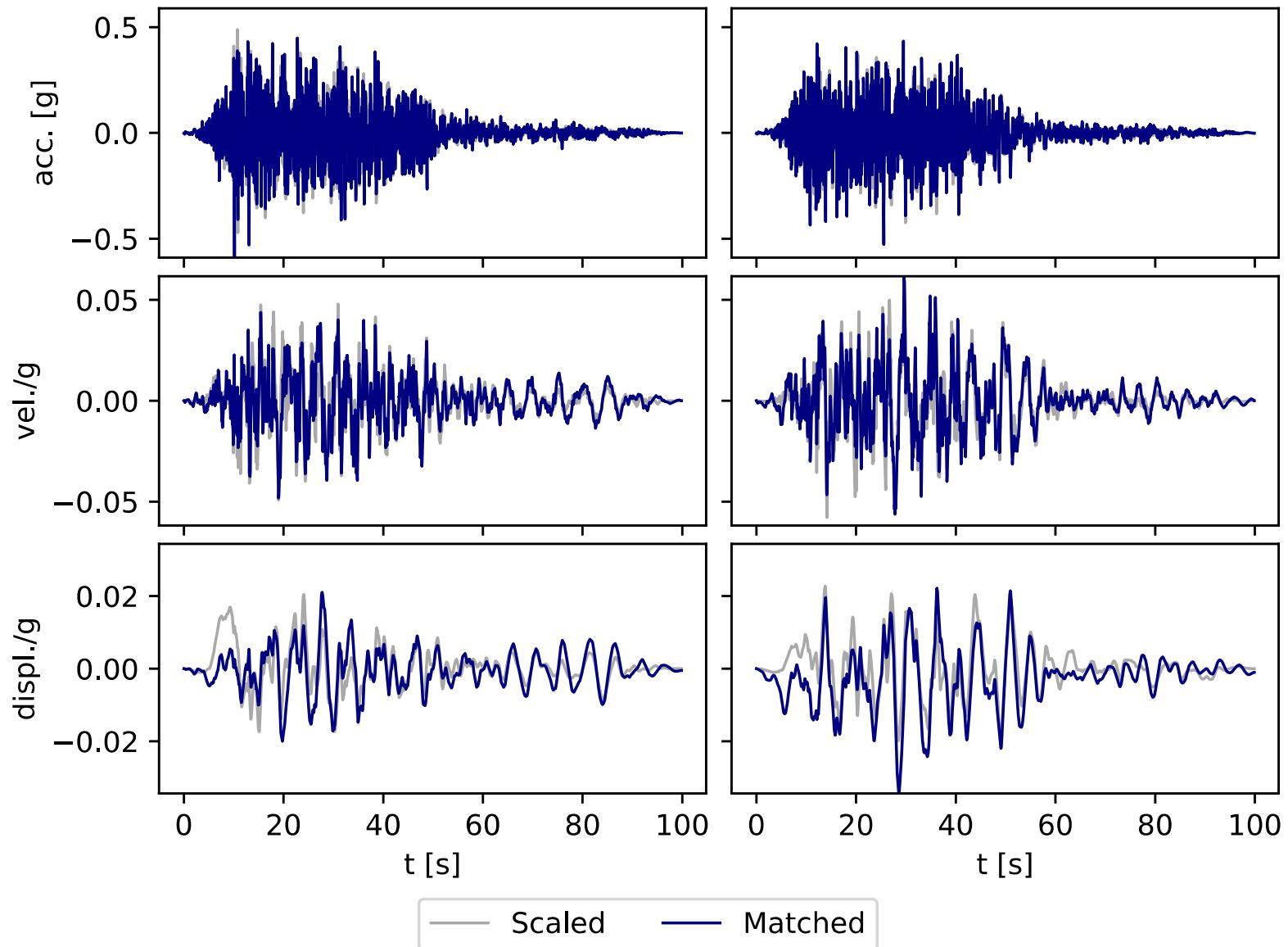


— Matched    - - - Original

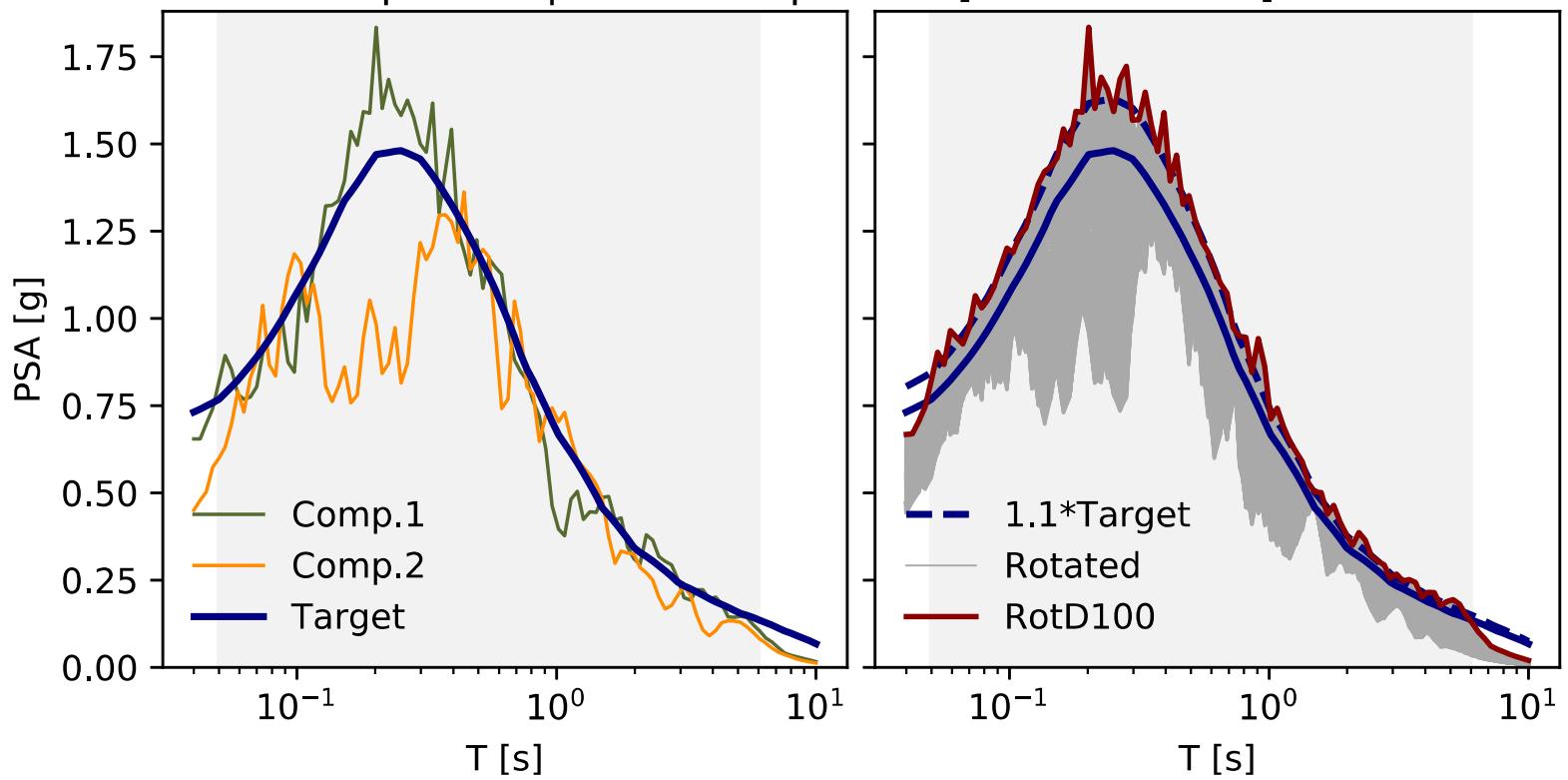
RotD100 ratios and angles [NGA.RSN.882]



Time Histories Comparison [NGA.RSN.882]



### Response Spectra Comparison [NGA.RSN.988]

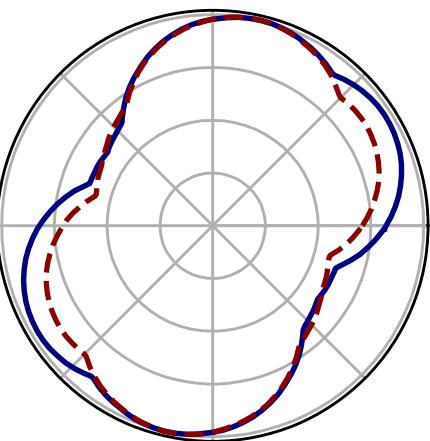
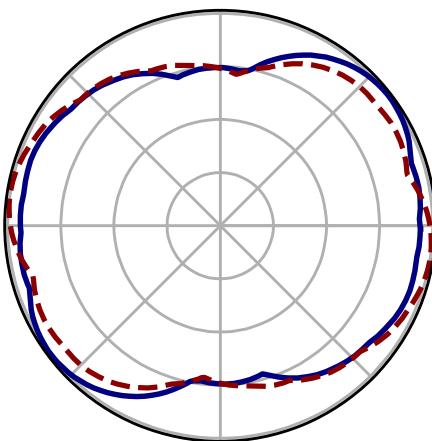
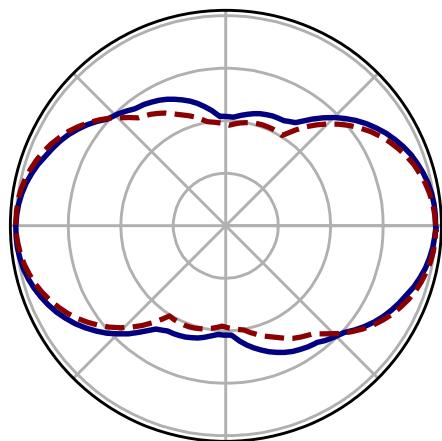


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.988]

T = 0.2 s

T = 0.3 s

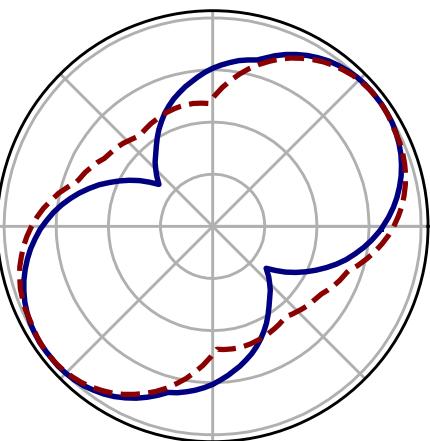
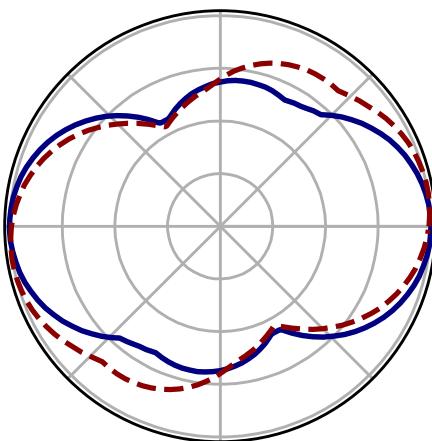
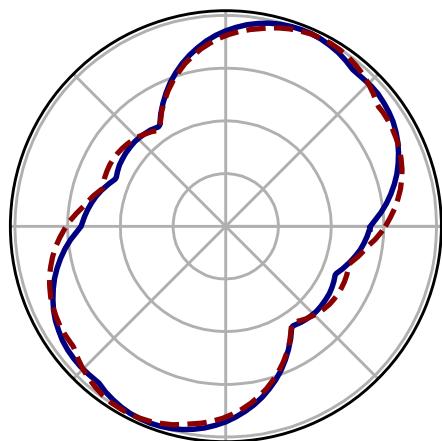
T = 0.7 s



T = 1.3 s

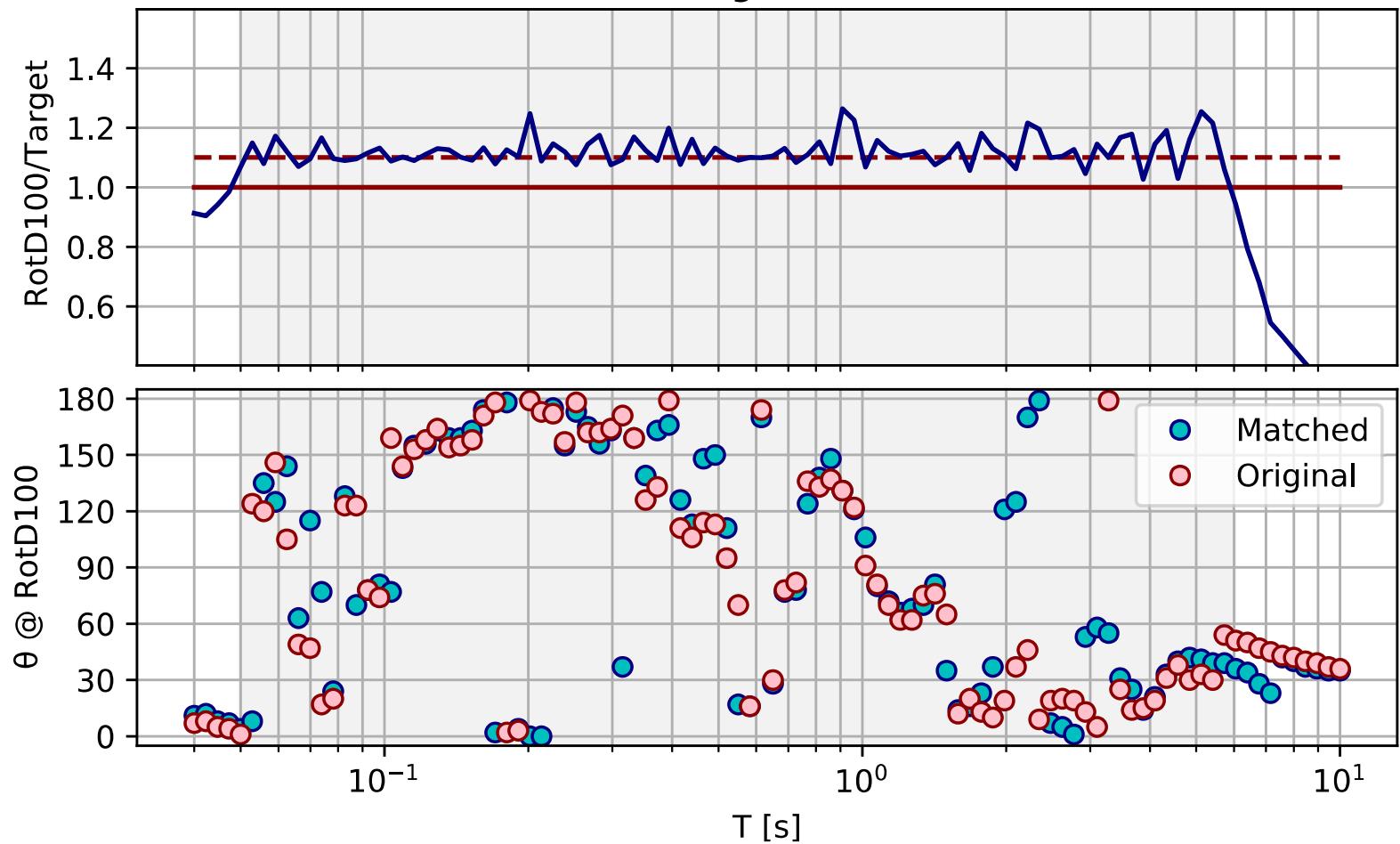
T = 2.3 s

T = 4.6 s

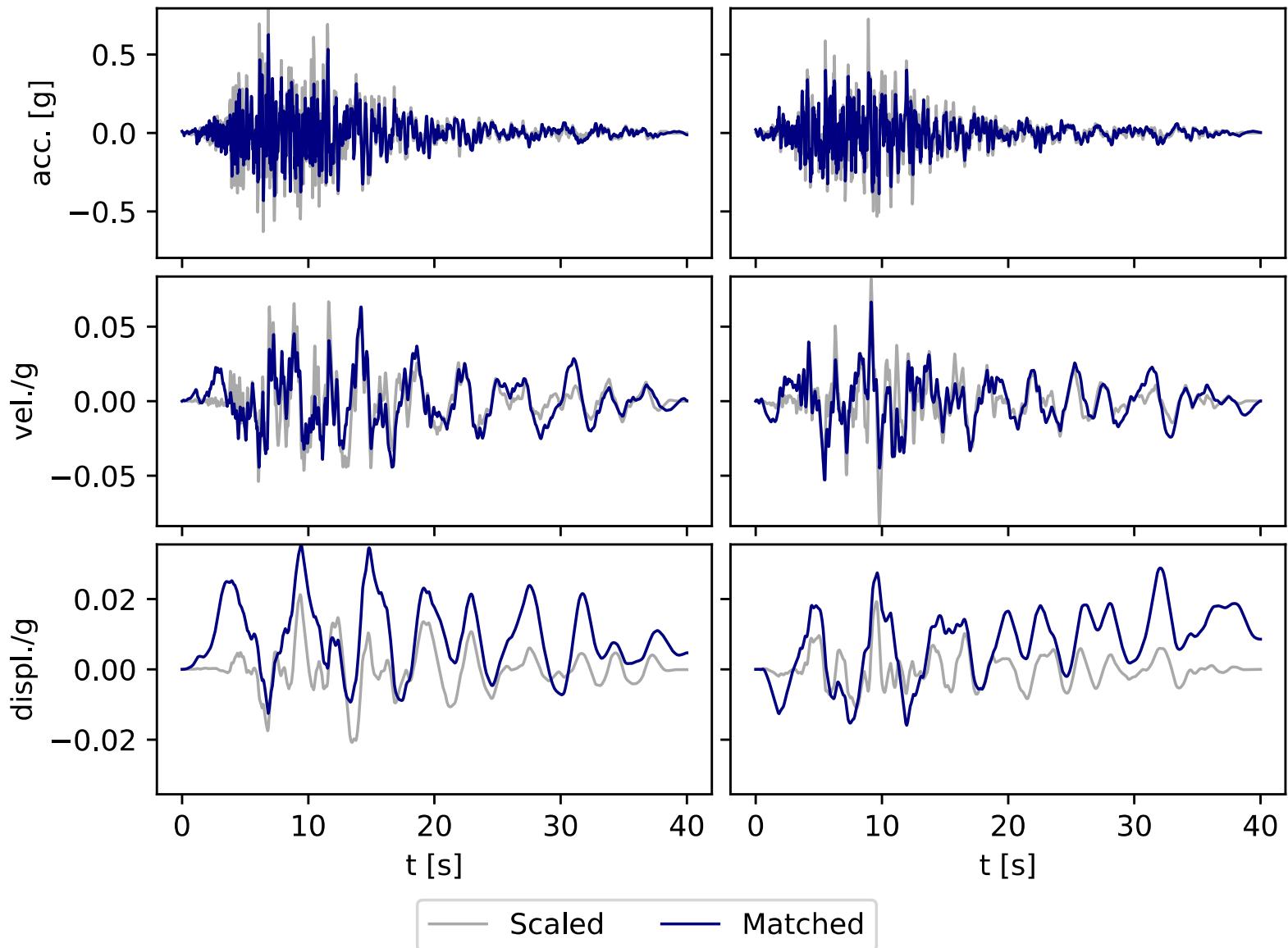


— Matched    - - - Original

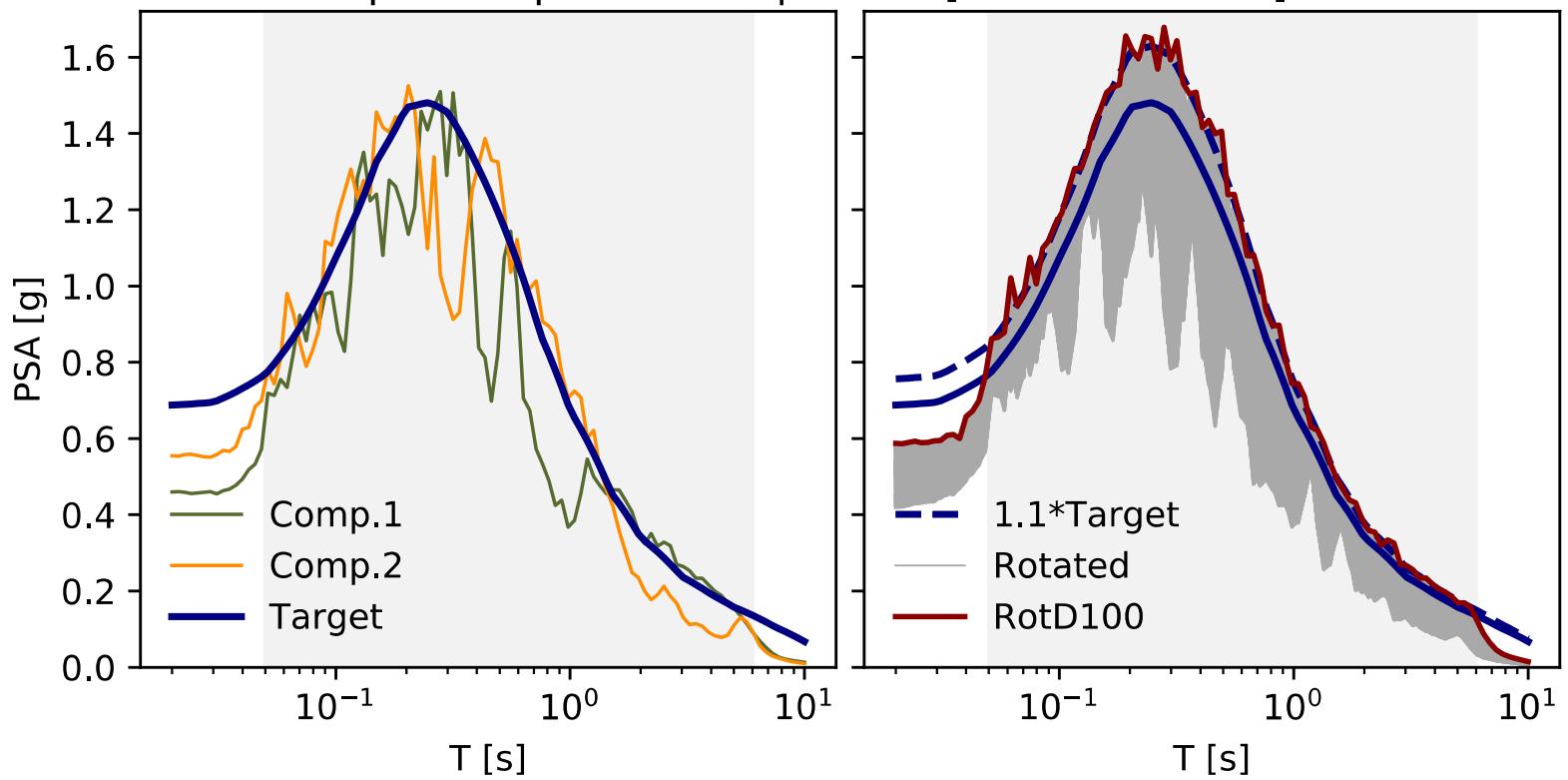
### RotD100 ratios and angles [NGA.RSN.988]



Time Histories Comparison [NGA.RSN.988]

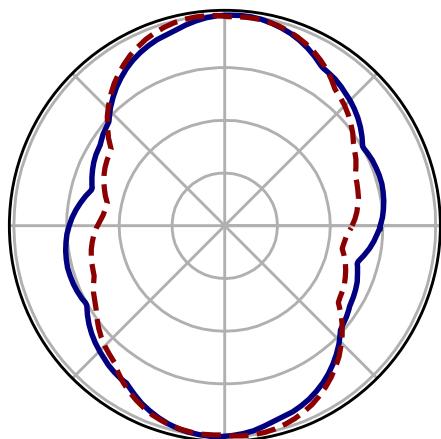


### Response Spectra Comparison [NGA.RSN.1005]

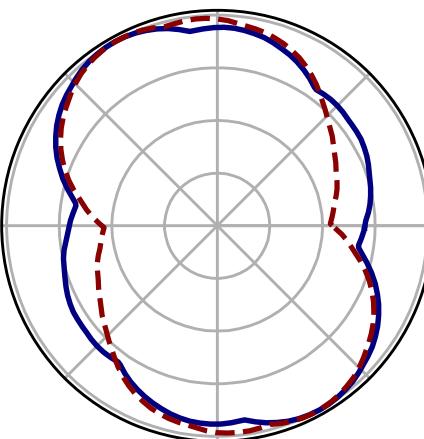


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.1005]

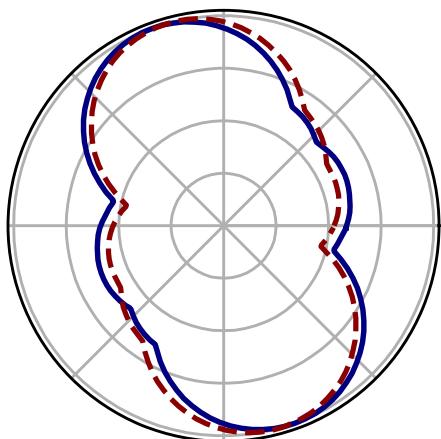
T = 0.1 s



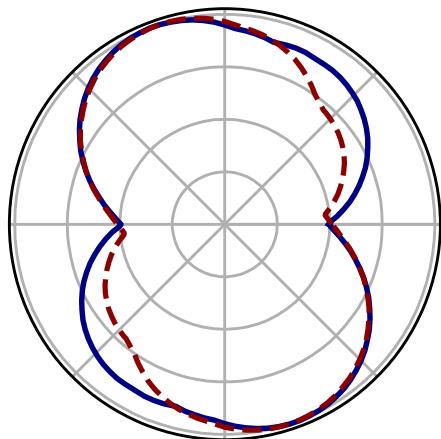
T = 0.2 s



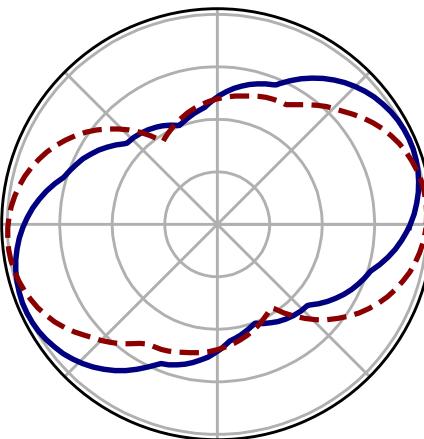
T = 0.5 s



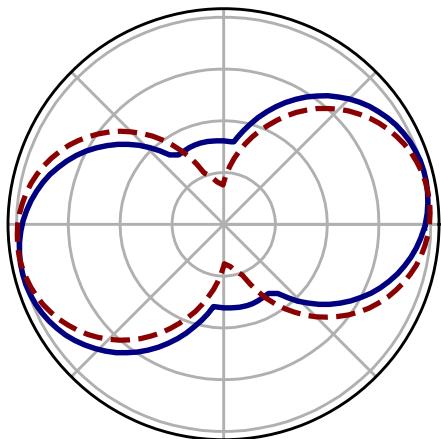
T = 1.0 s



T = 2.0 s

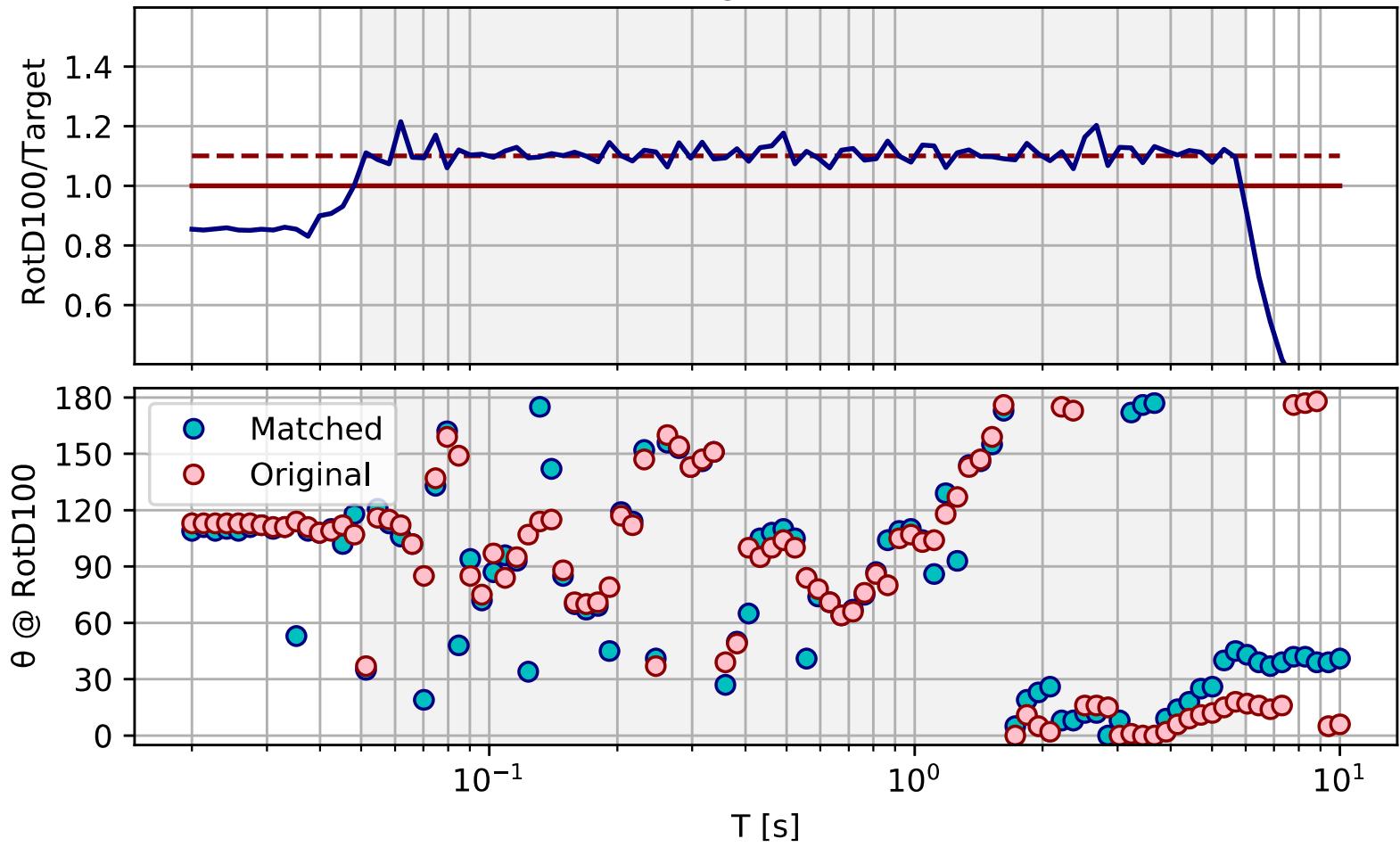


T = 4.2 s

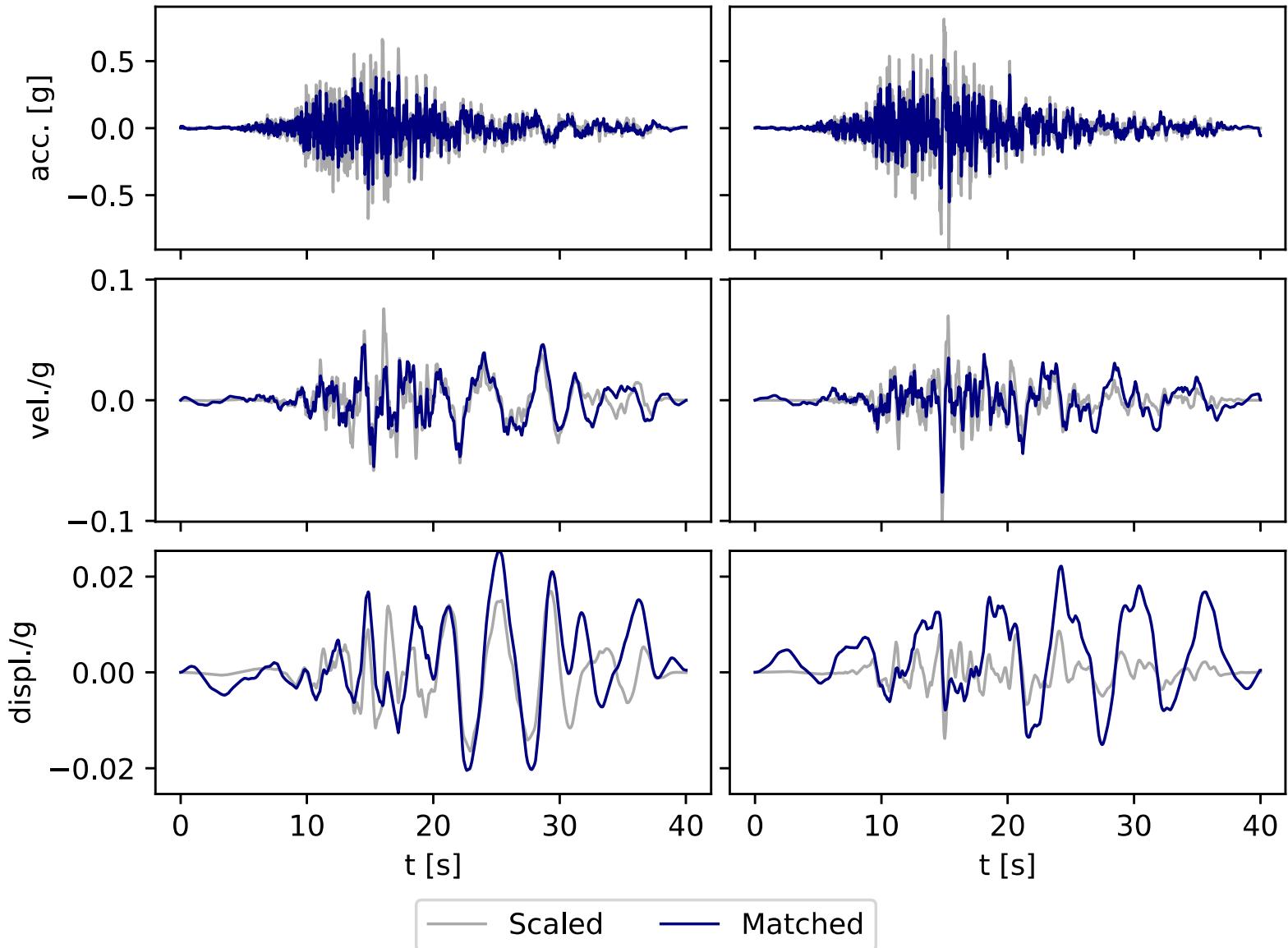


— Matched    - - - Original

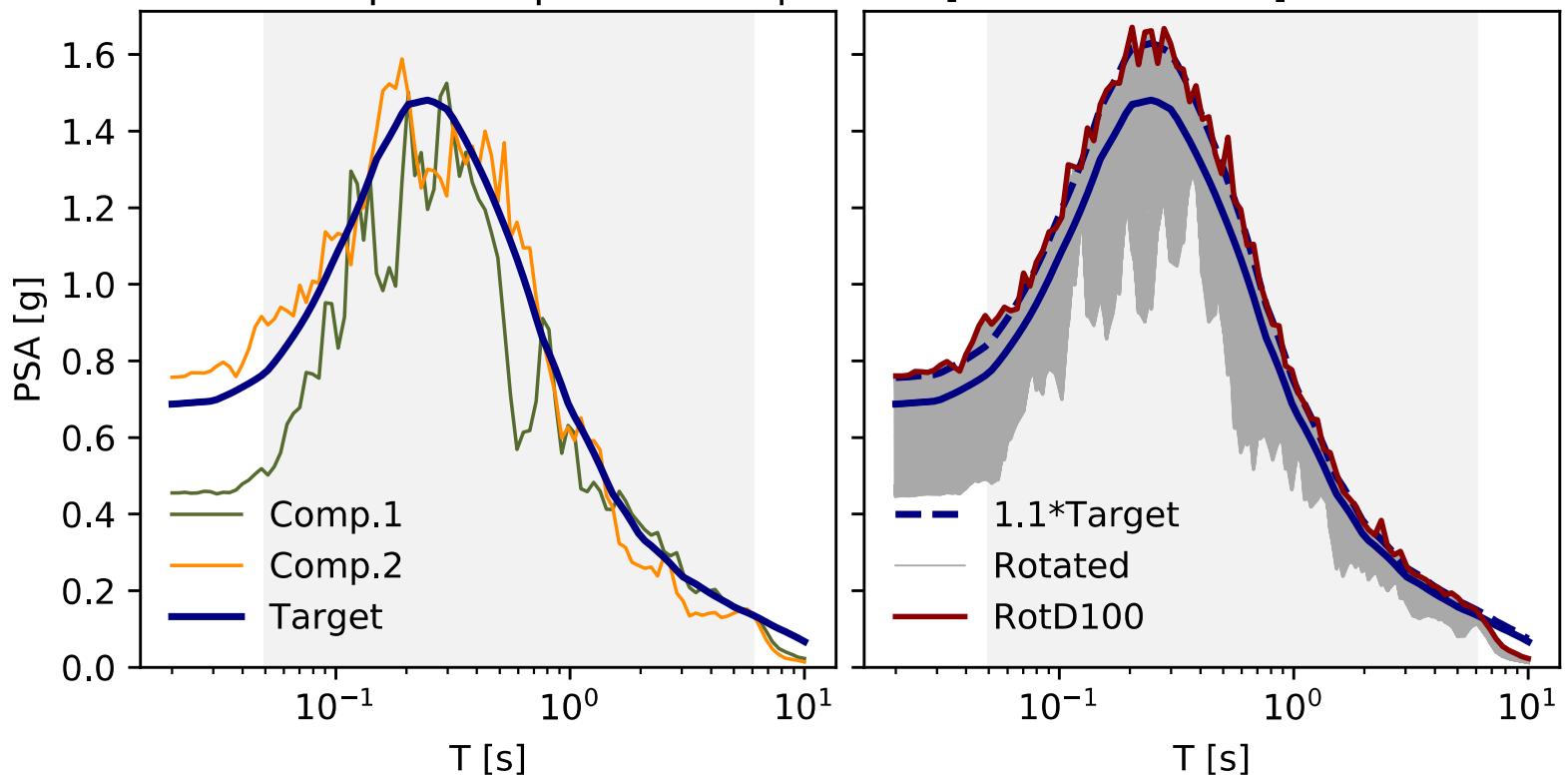
RotD100 ratios and angles [NGA.RSN.1005]



Time Histories Comparison [NGA.RSN.1005]



### Response Spectra Comparison [NGA.RSN.1008]

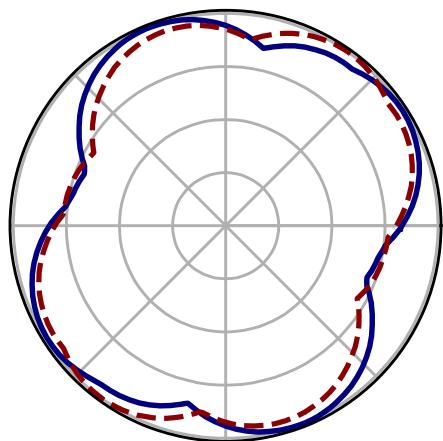
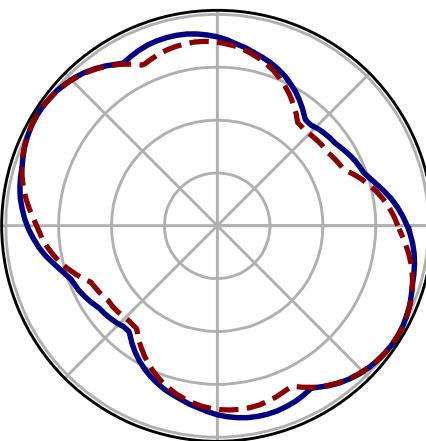
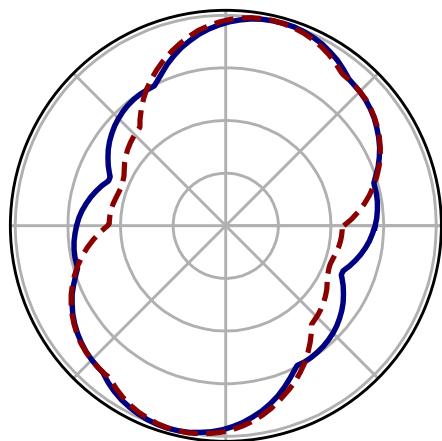


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.1008]

T = 0.1 s

T = 0.2 s

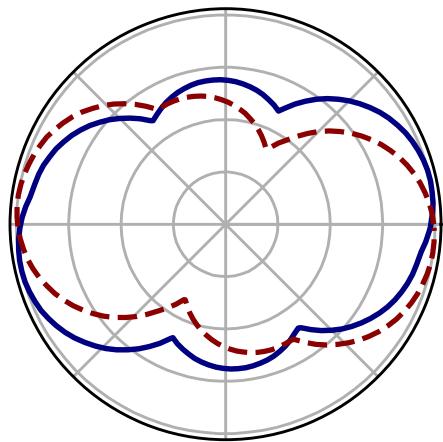
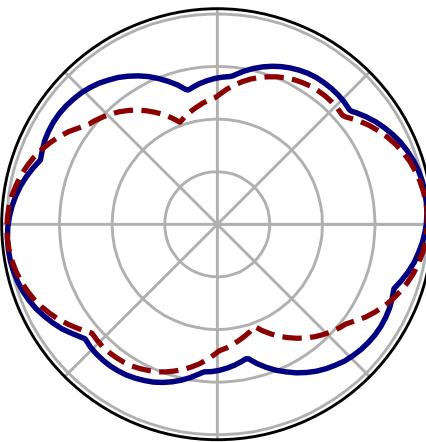
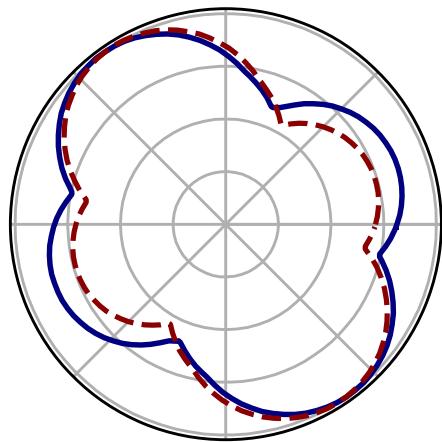
T = 0.5 s



T = 1.0 s

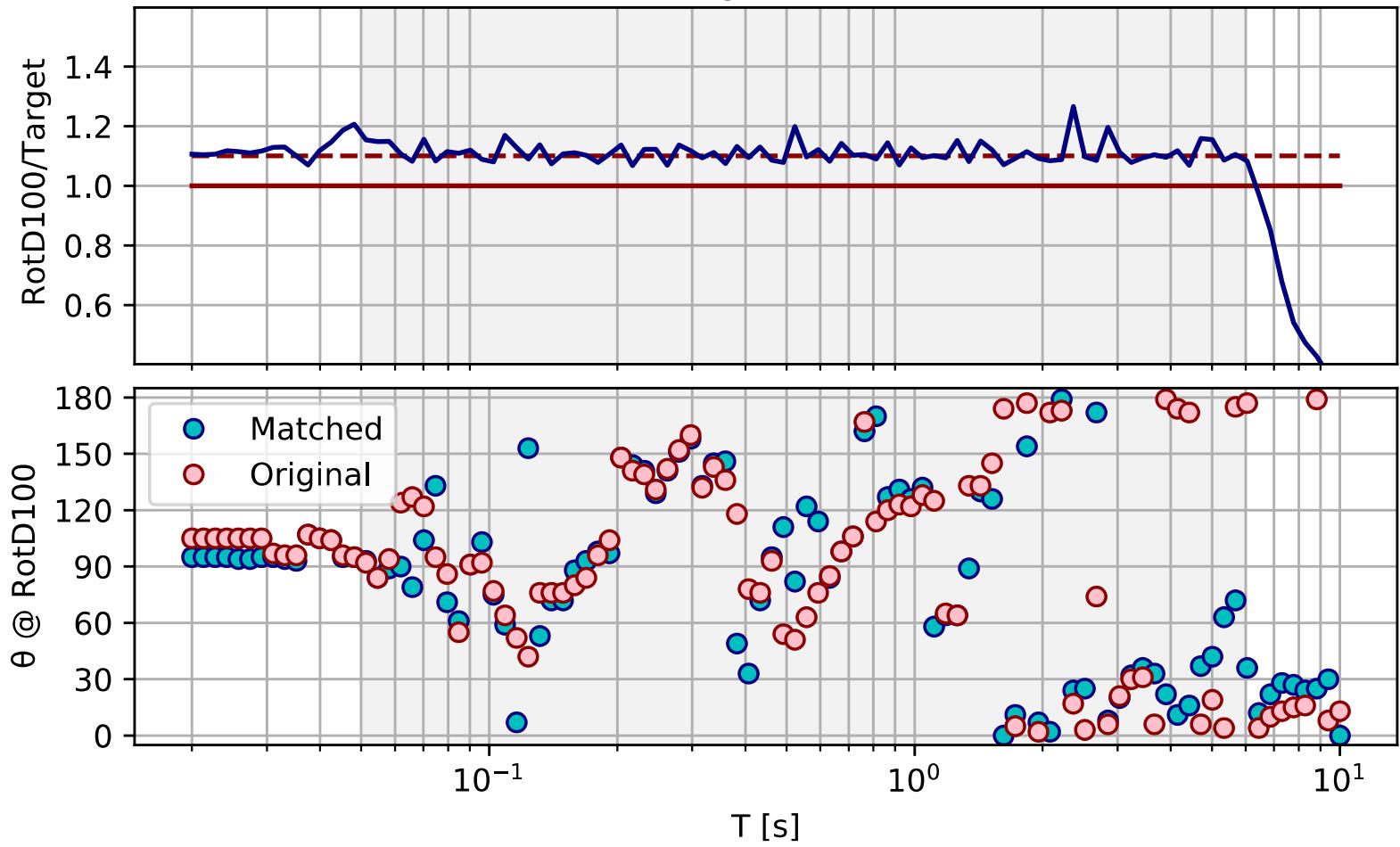
T = 2.0 s

T = 4.2 s

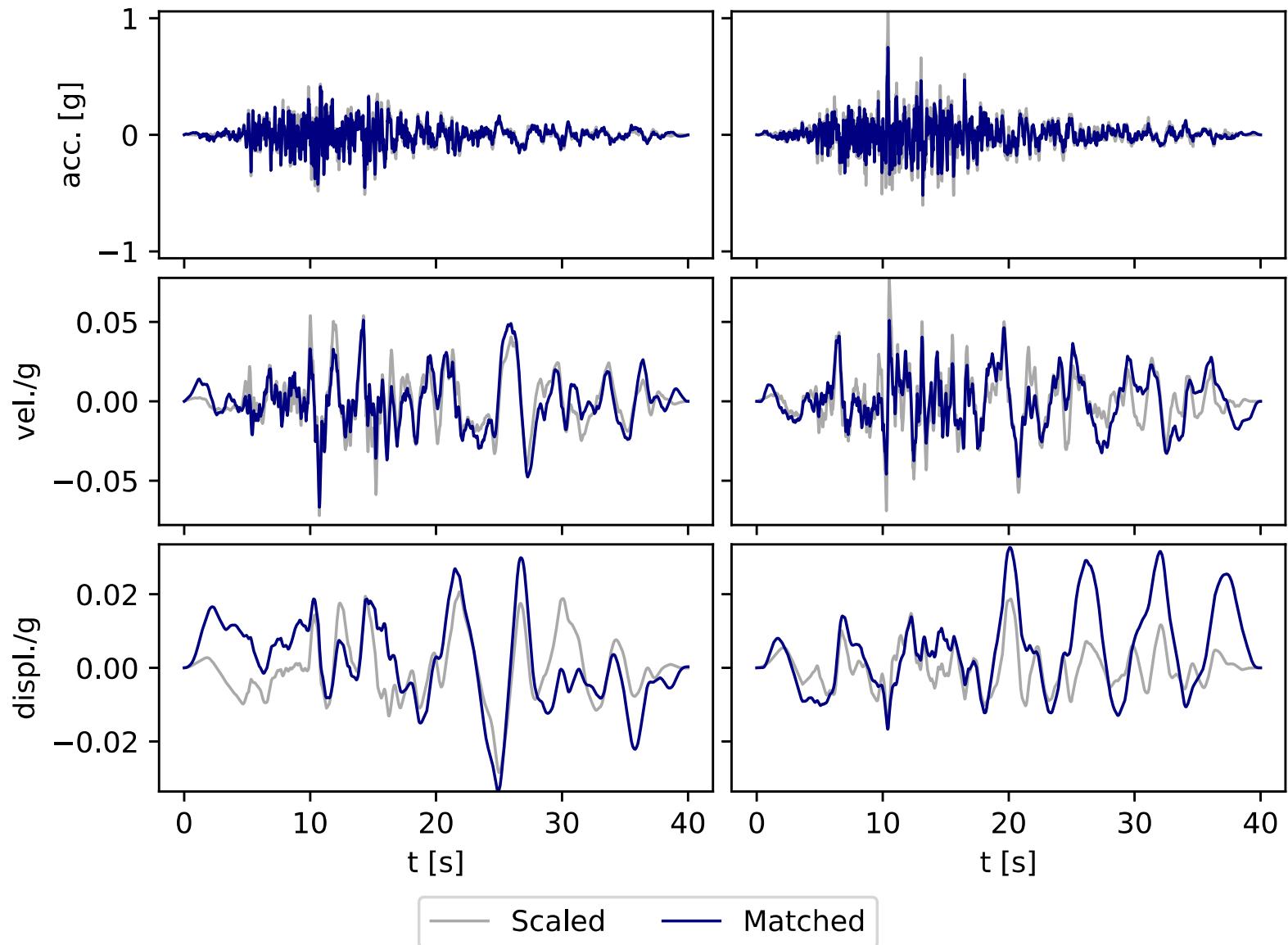


— Matched    - - Original

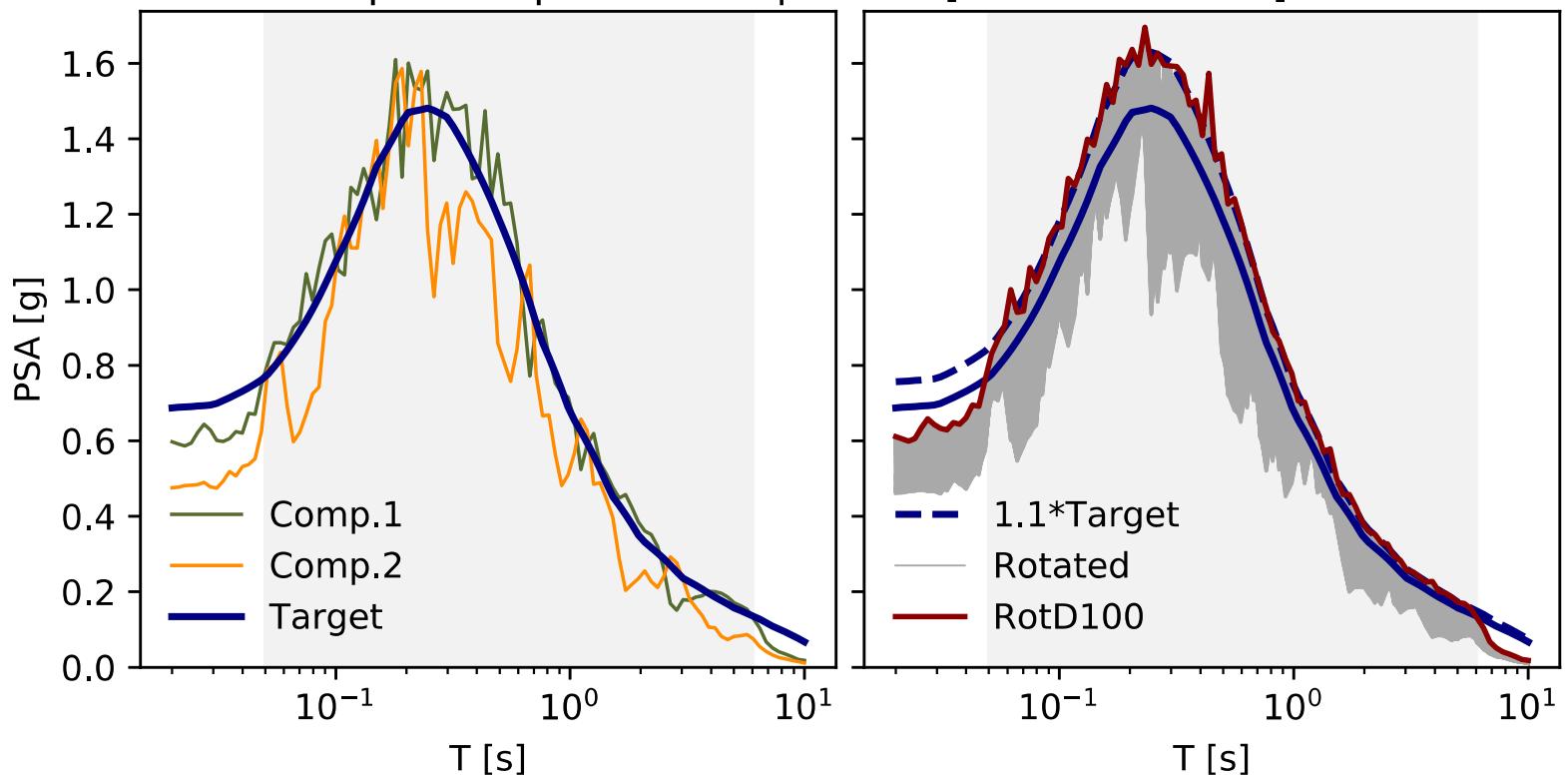
RotD100 ratios and angles [NGA.RSN.1008]



Time Histories Comparison [NGA.RSN.1008]

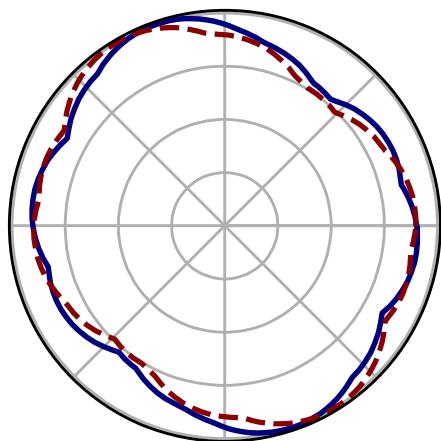


### Response Spectra Comparison [NGA.RSN.1115]

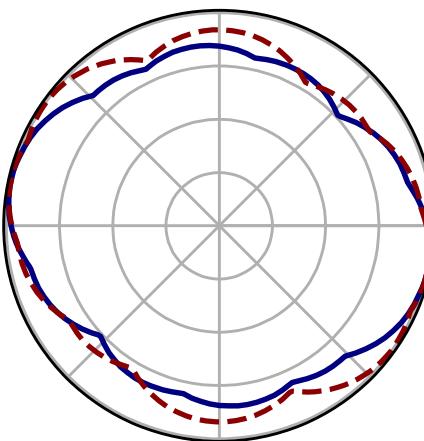


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.1115]

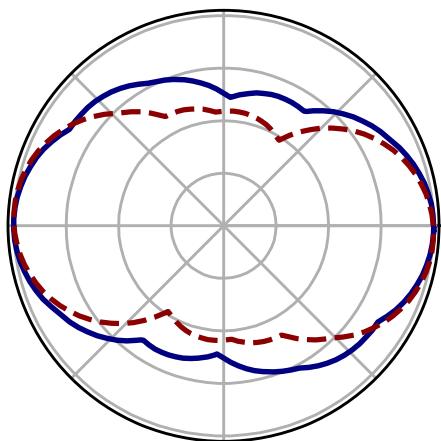
T = 0.1 s



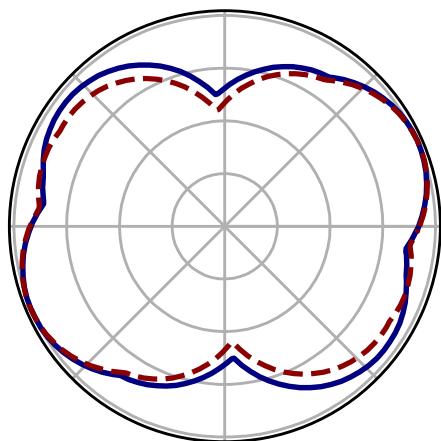
T = 0.2 s



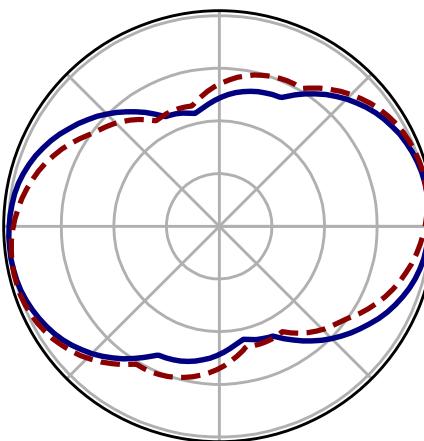
T = 0.5 s



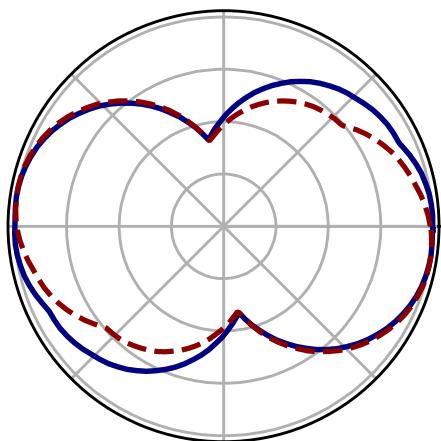
T = 1.0 s



T = 2.0 s

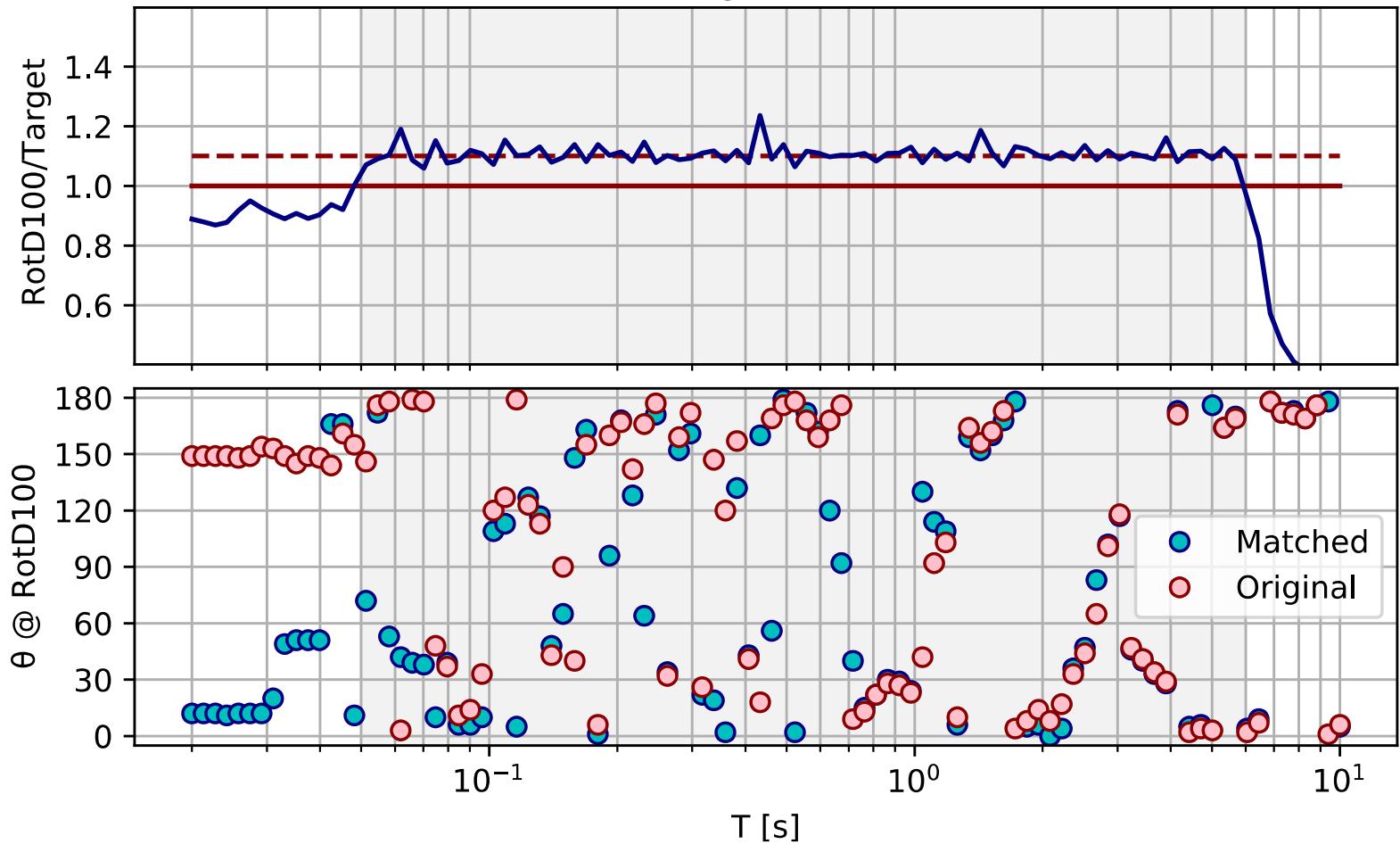


T = 4.2 s

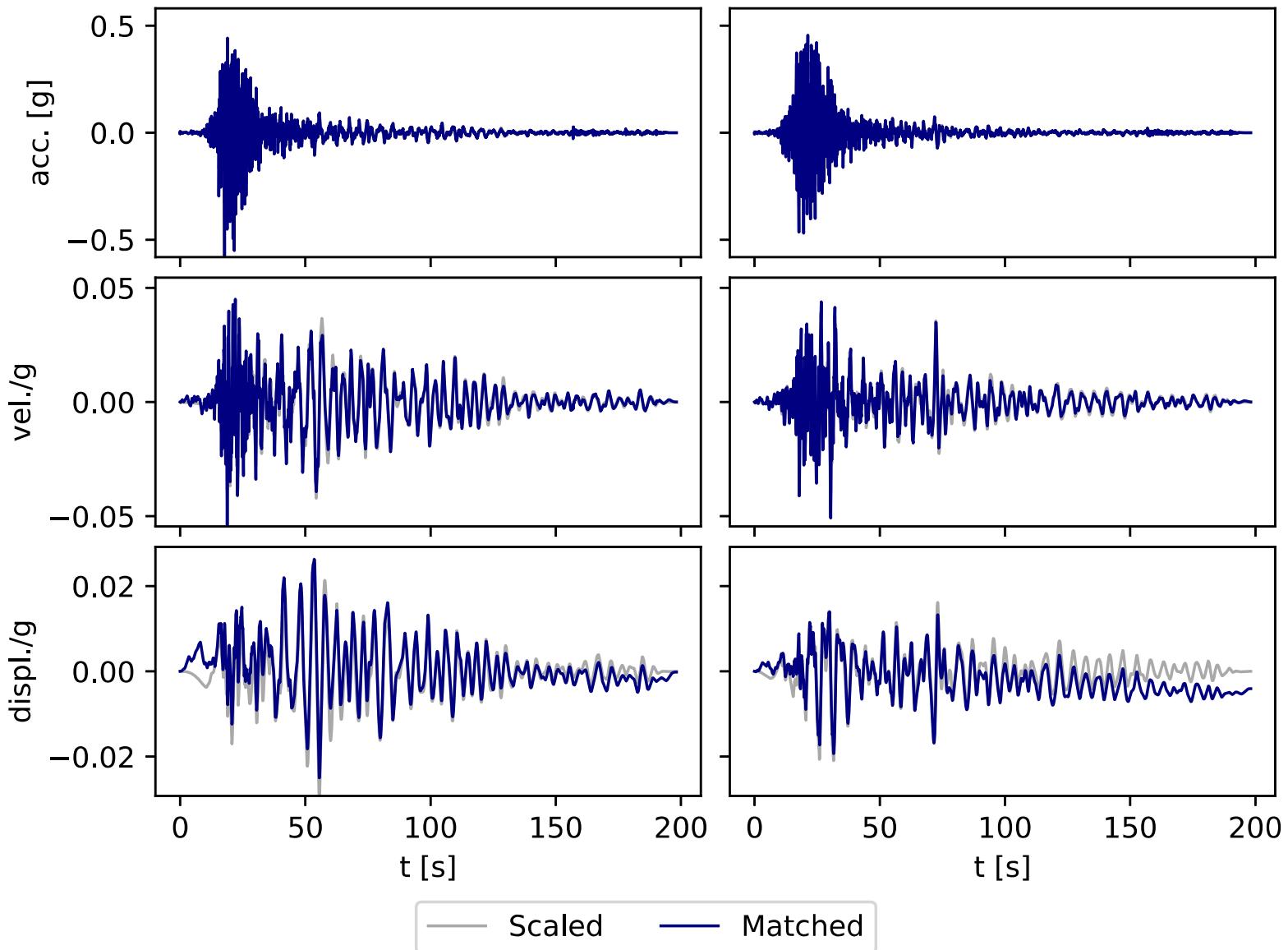


— Matched    - - - Original

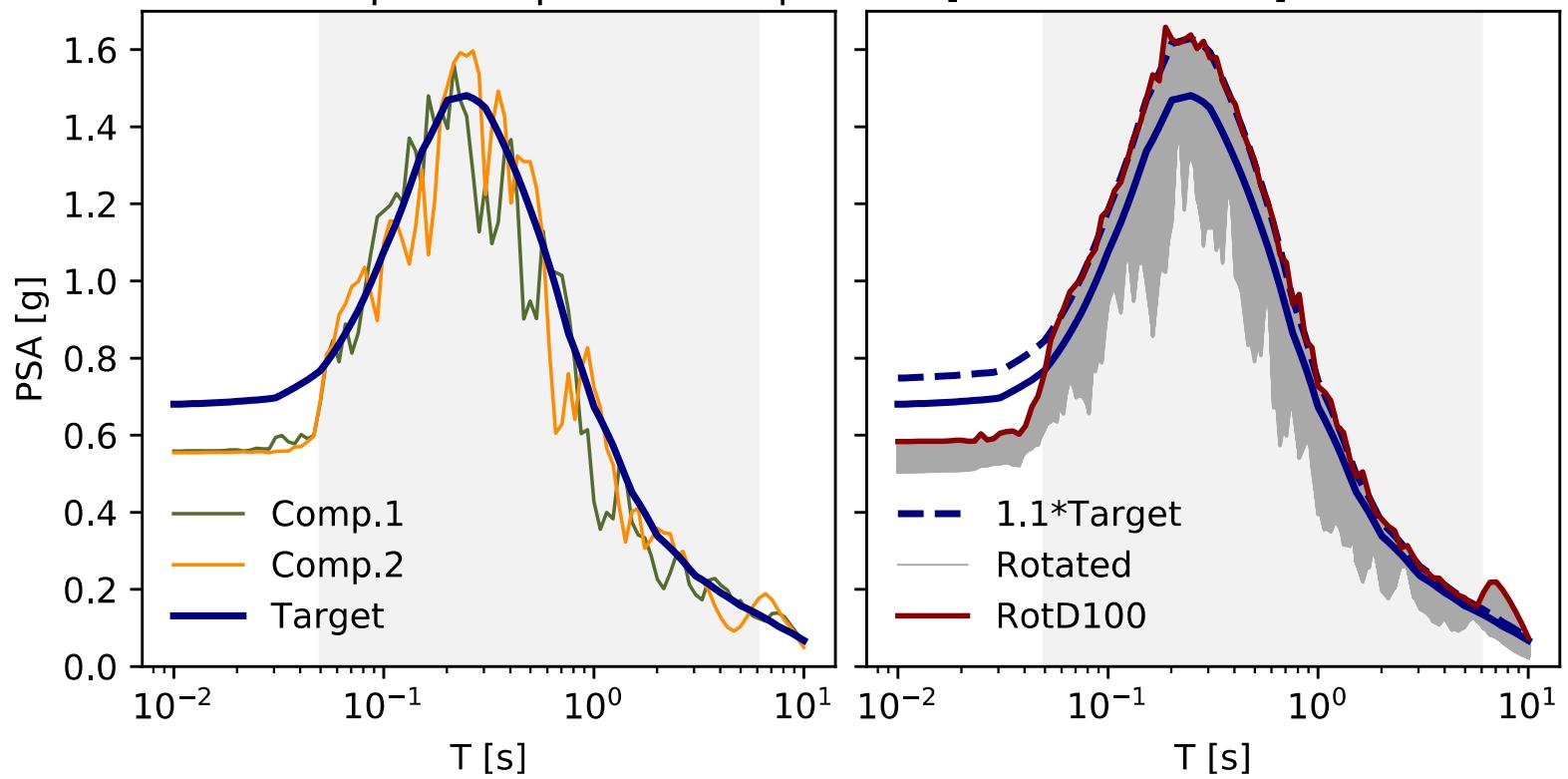
RotD100 ratios and angles [NGA.RSN.1115]



Time Histories Comparison [NGA.RSN.1115]

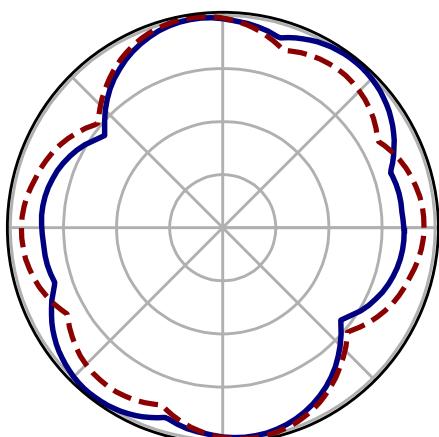


### Response Spectra Comparison [NGA.RSN.1546]

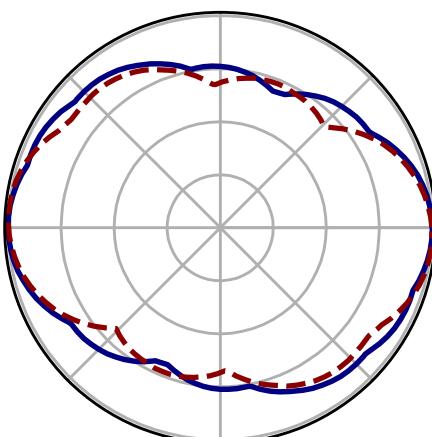


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.1546]

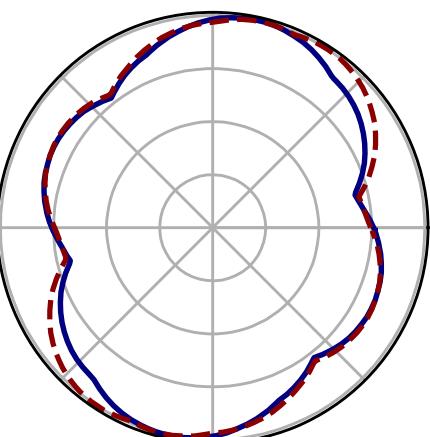
$T = 0.1 \text{ s}$



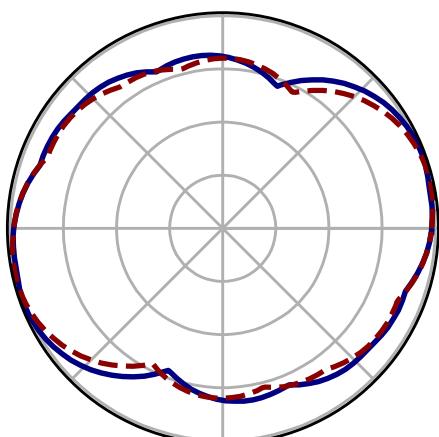
$T = 0.1 \text{ s}$



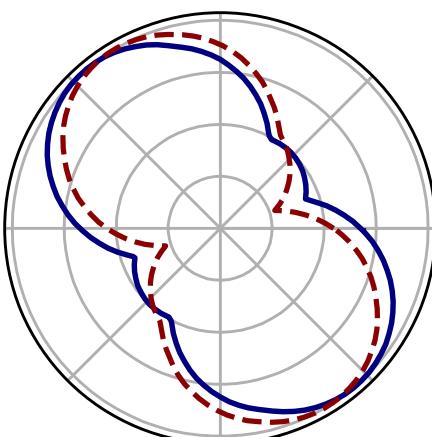
$T = 0.4 \text{ s}$



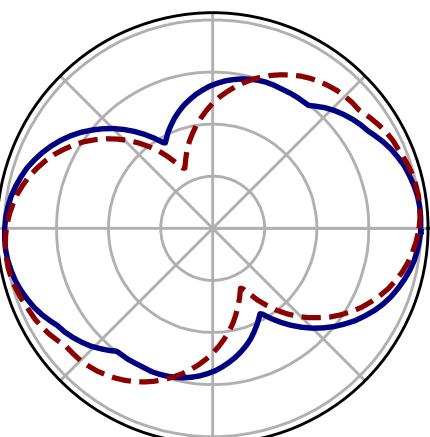
$T = 0.8 \text{ s}$



$T = 1.6 \text{ s}$

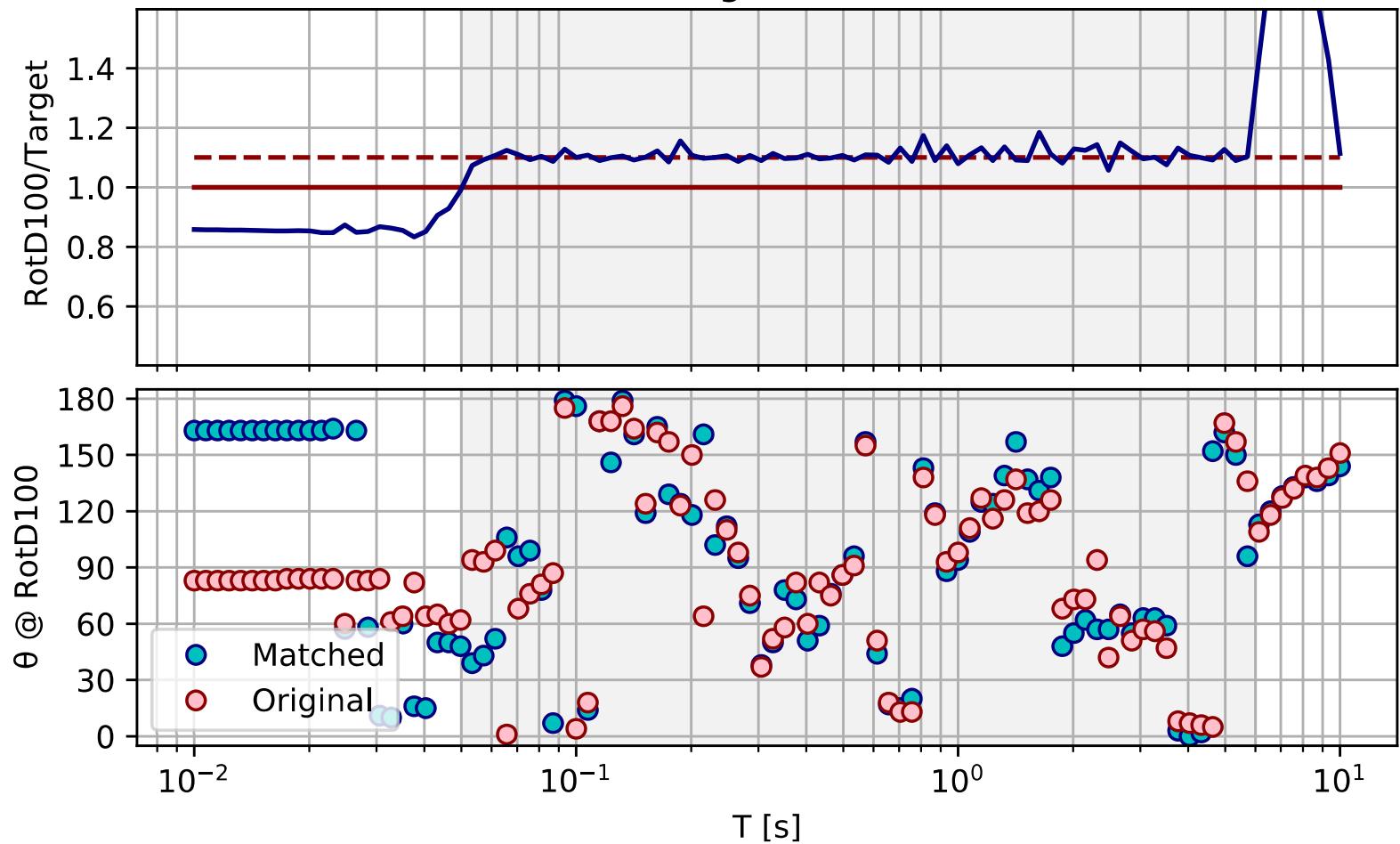


$T = 3.8 \text{ s}$

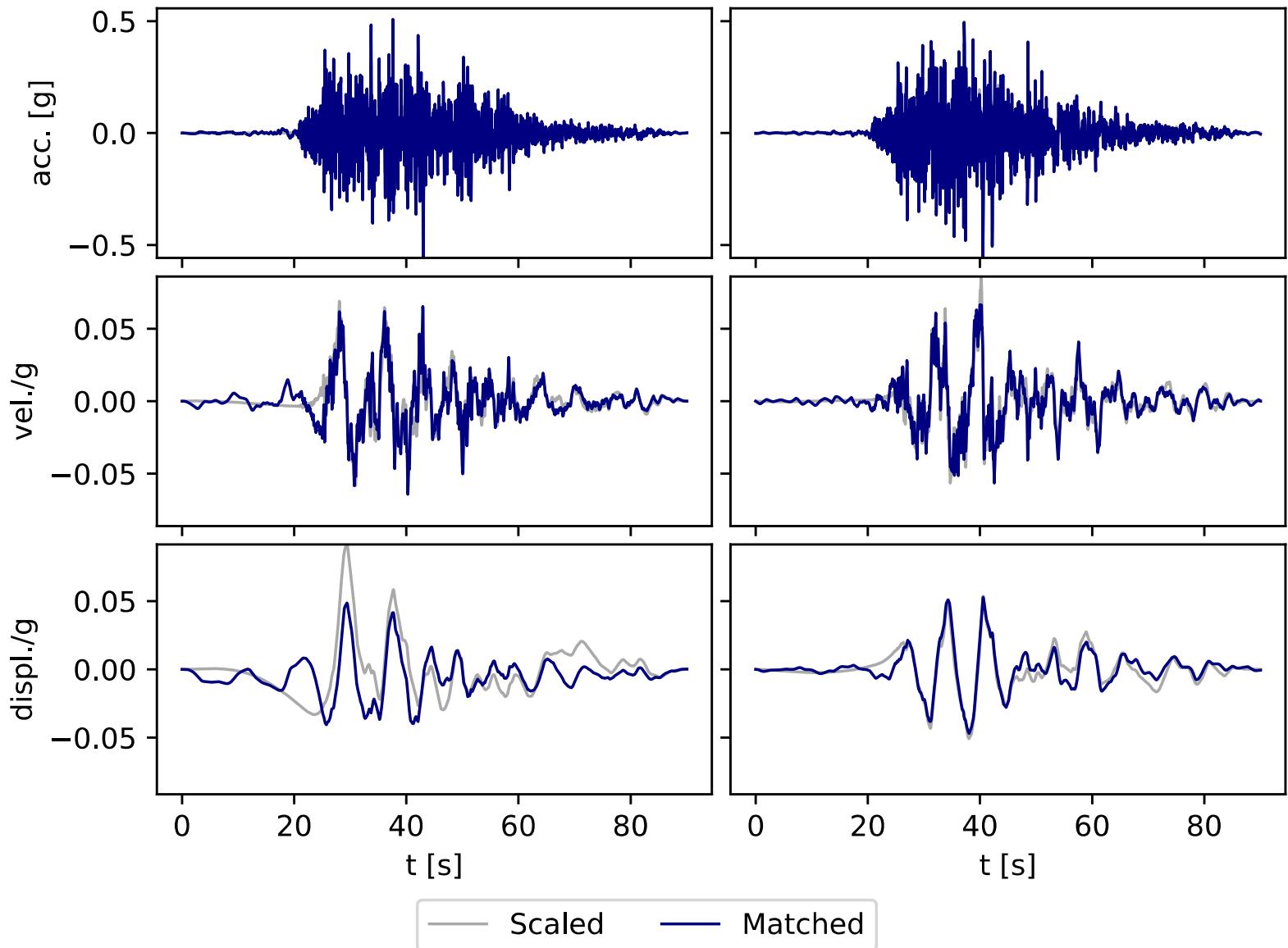


— Matched    - - Original

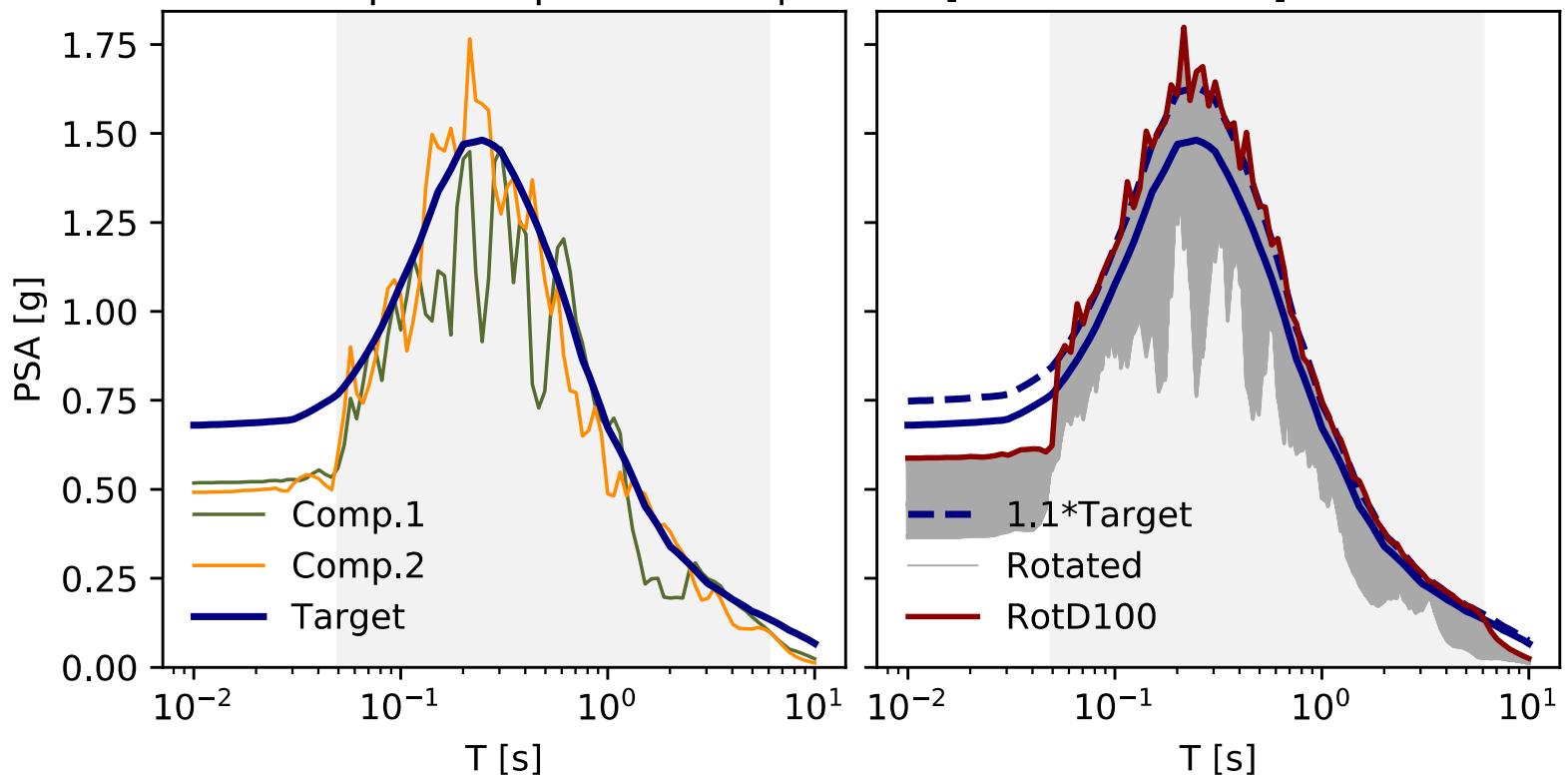
RotD100 ratios and angles [NGA.RSN.1546]



Time Histories Comparison [NGA.RSN.1546]

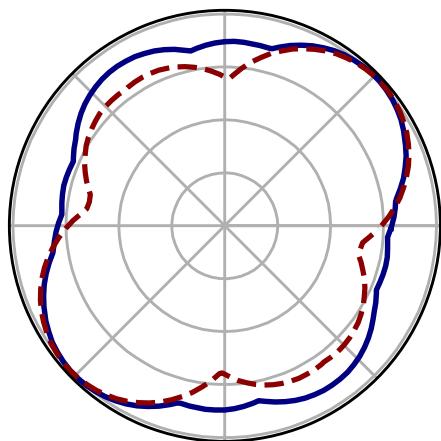


### Response Spectra Comparison [NGA.RSN.2752]

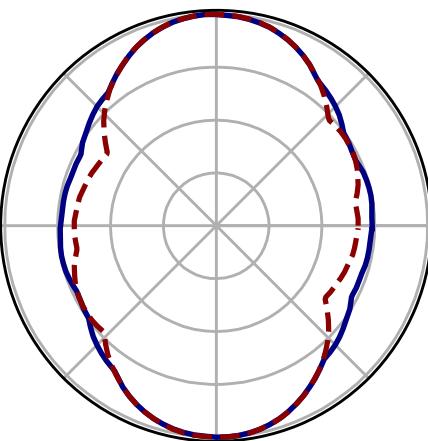


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.2752]

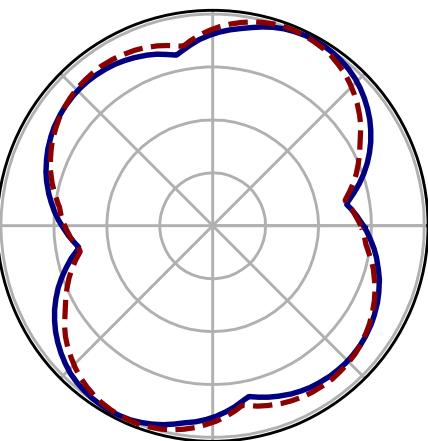
T = 0.1 s



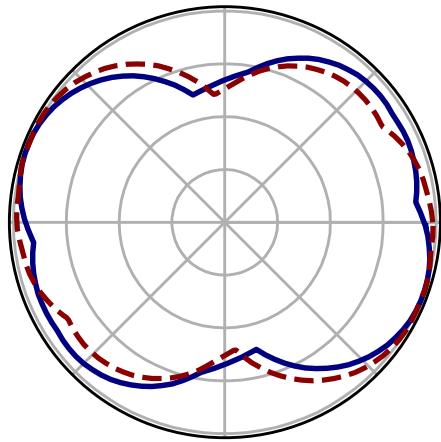
T = 0.1 s



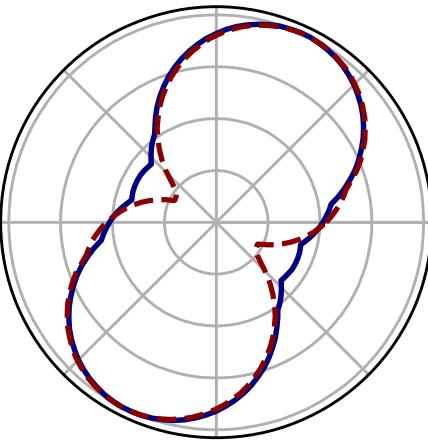
T = 0.4 s



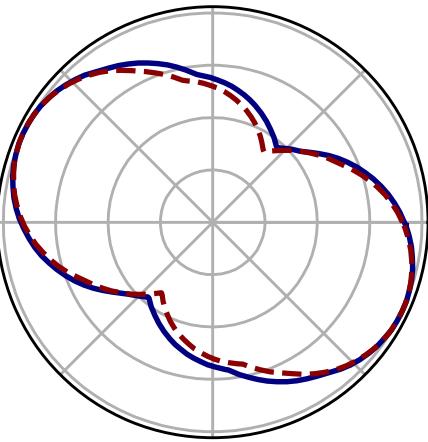
T = 0.8 s



T = 1.6 s

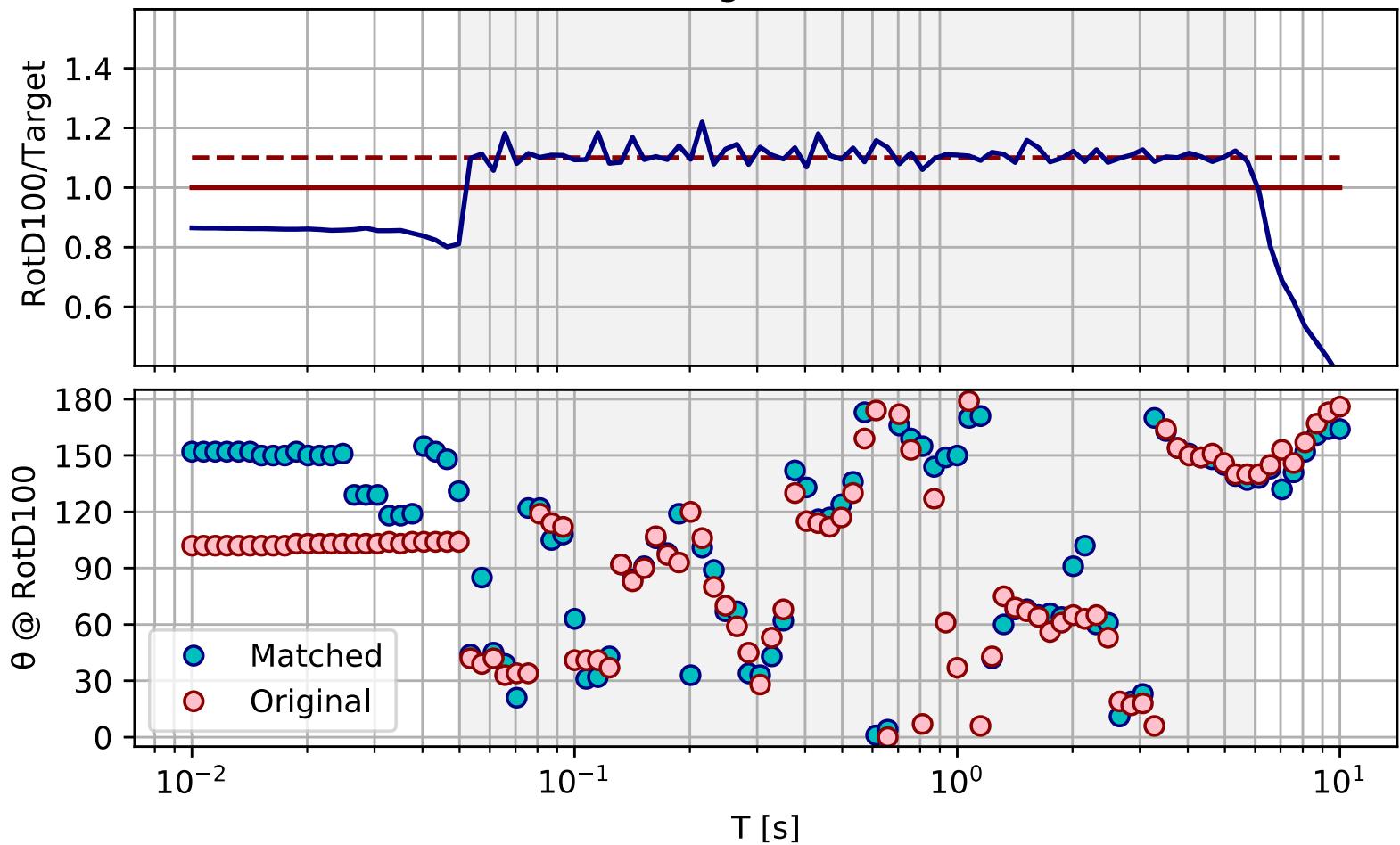


T = 3.8 s

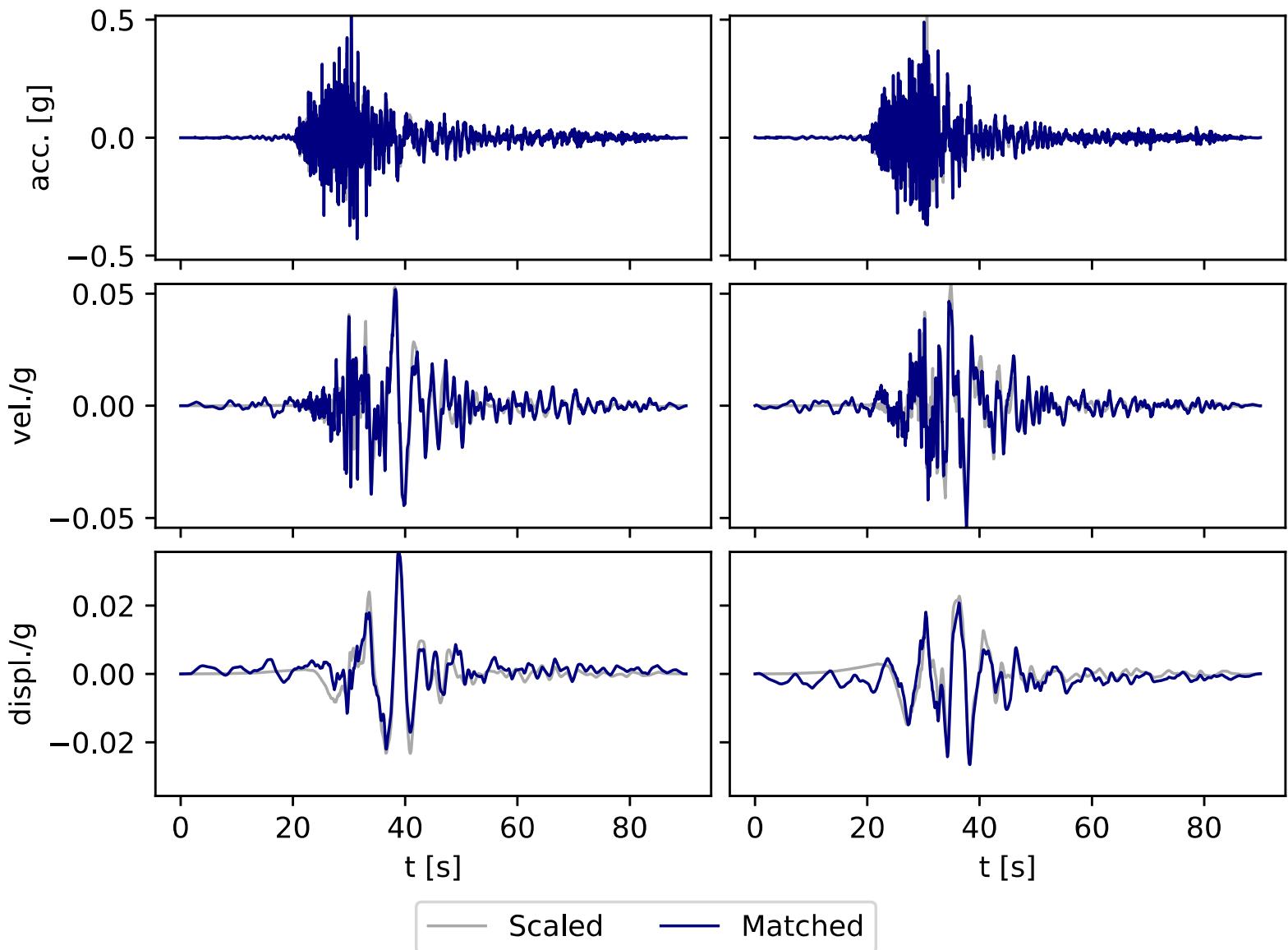


— Matched    - - - Original

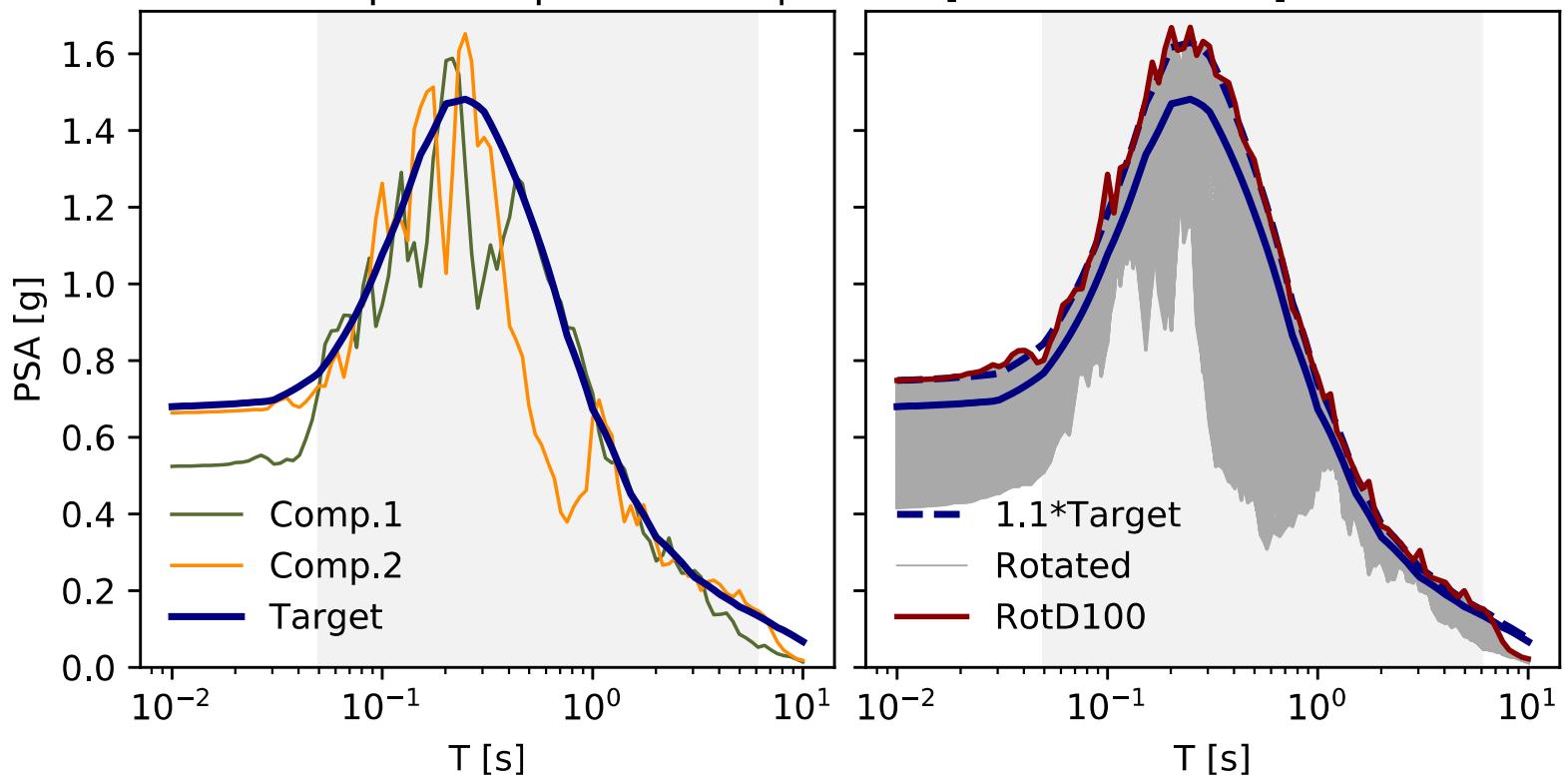
RotD100 ratios and angles [NGA.RSN.2752]



Time Histories Comparison [NGA.RSN.2752]



### Response Spectra Comparison [NGA.RSN.3302]

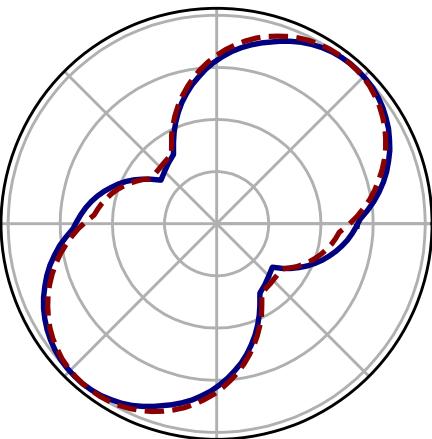
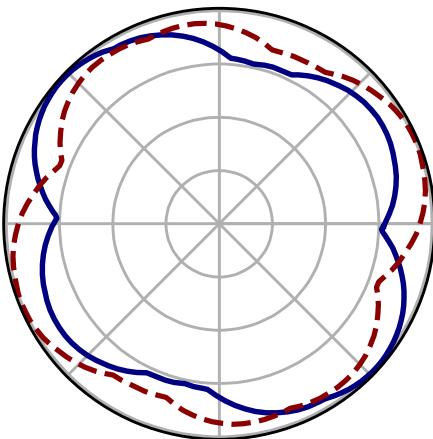
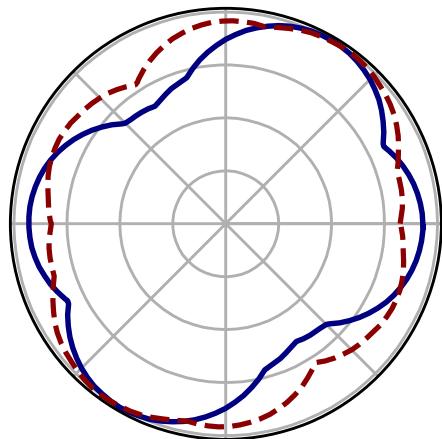


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.3302]

T = 0.1 s

T = 0.1 s

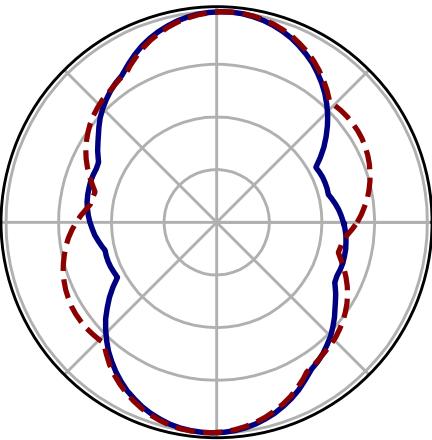
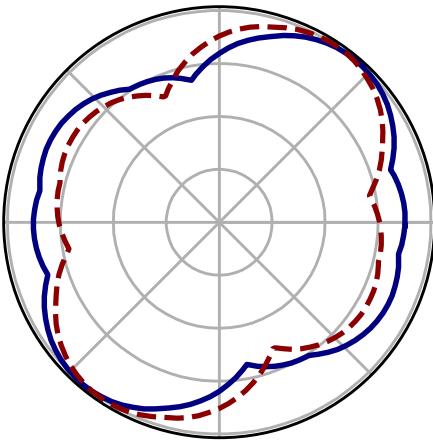
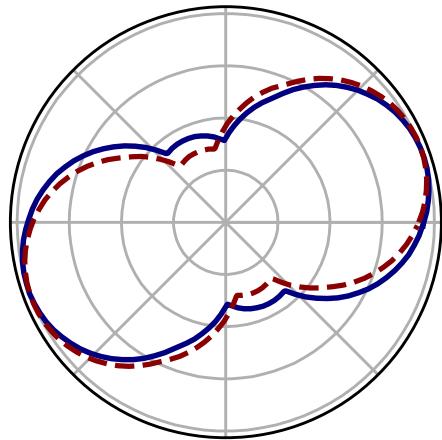
T = 0.4 s



T = 0.8 s

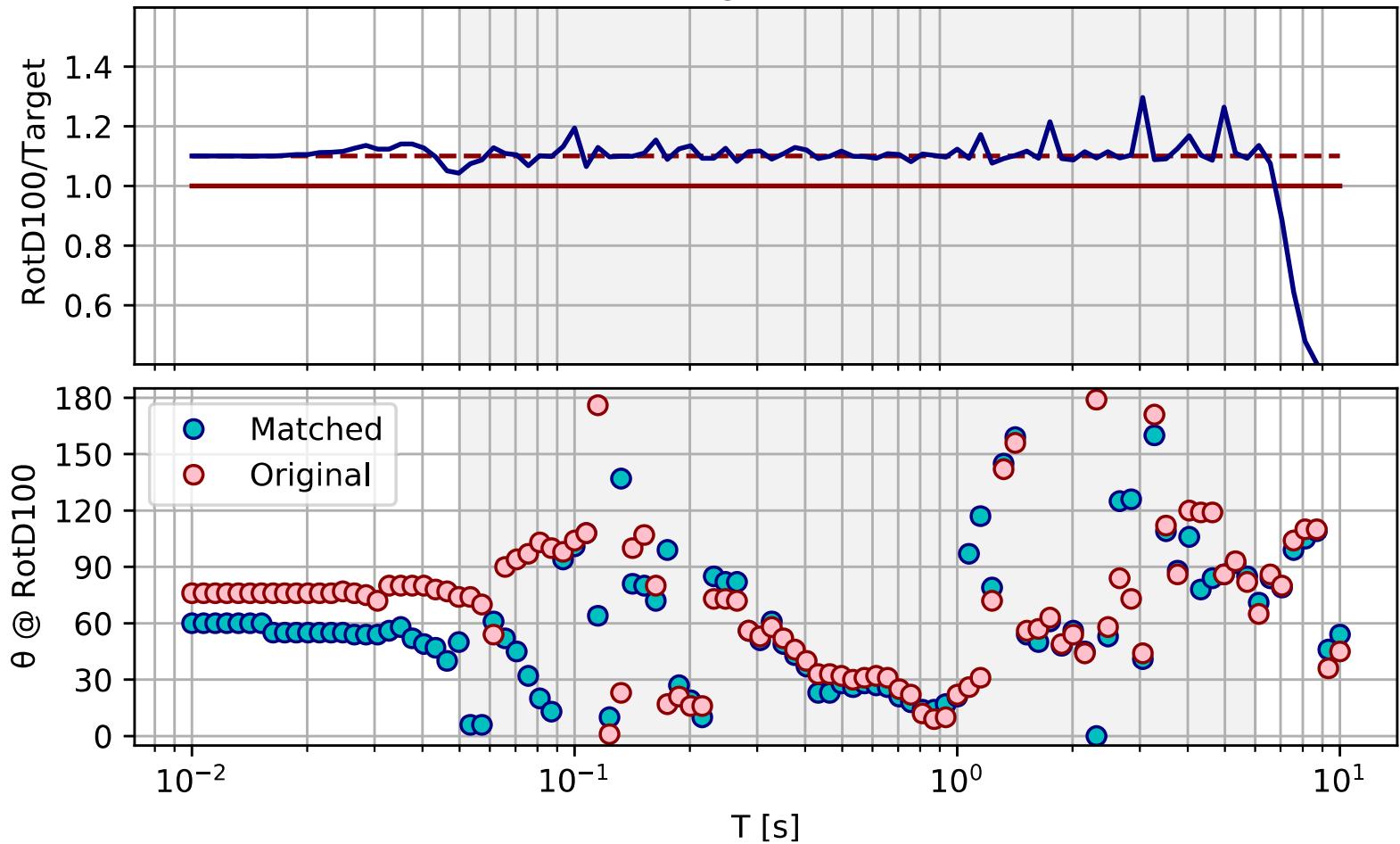
T = 1.6 s

T = 3.8 s

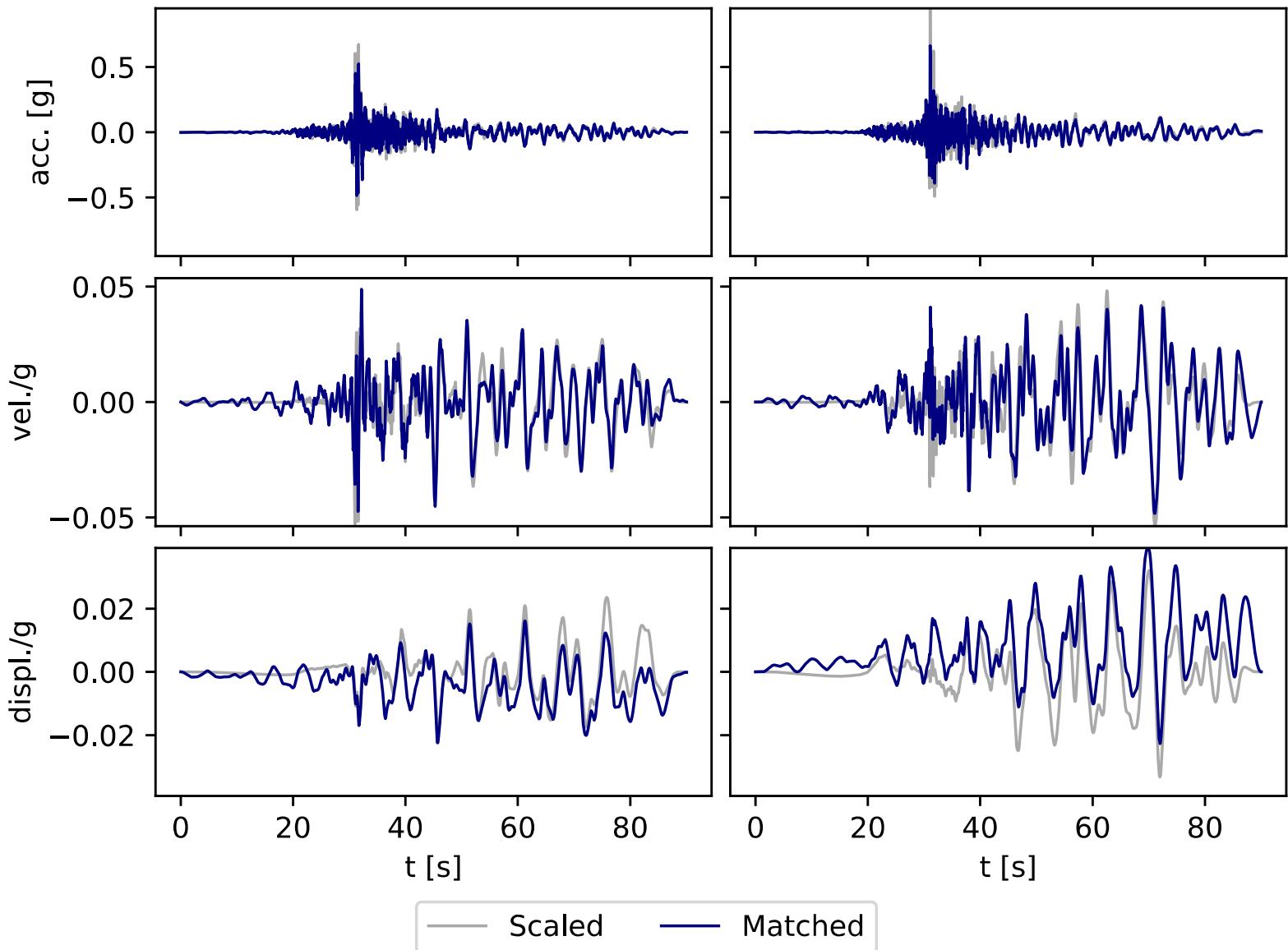


— Matched    - - - Original

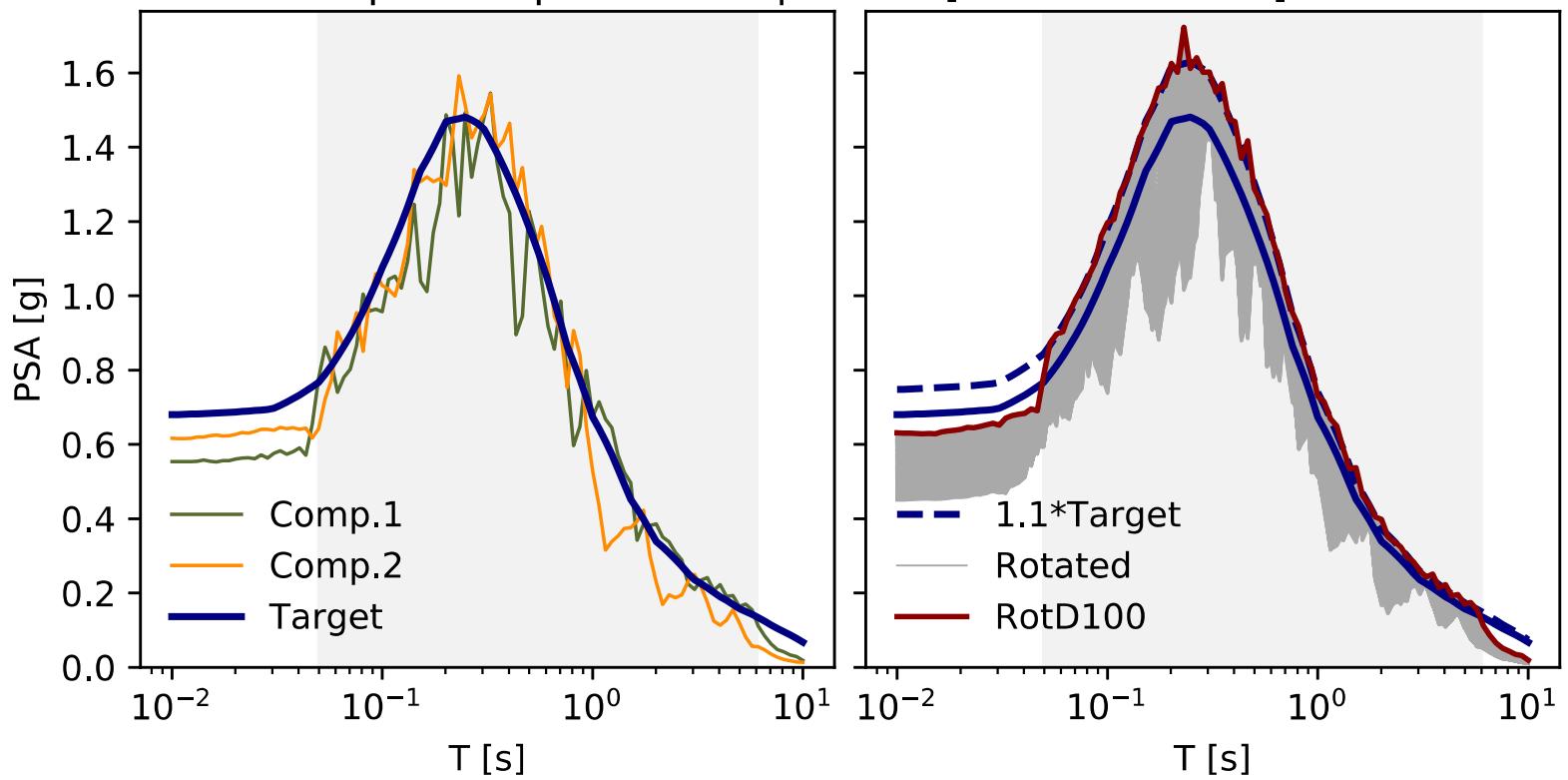
RotD100 ratios and angles [NGA.RSN.3302]



Time Histories Comparison [NGA.RSN.3302]

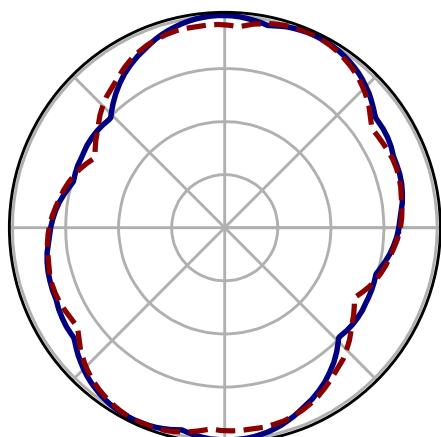


### Response Spectra Comparison [NGA.RSN.3757]

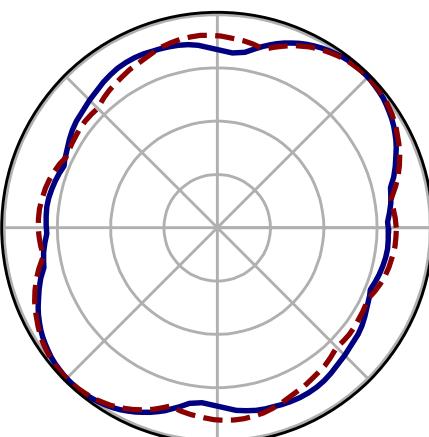


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.3757]

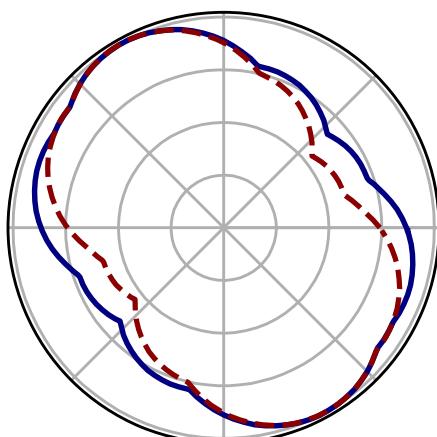
T = 0.1 s



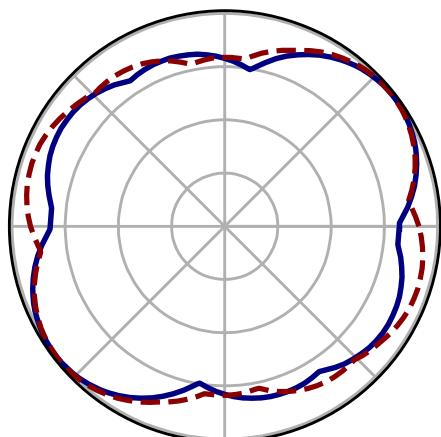
T = 0.1 s



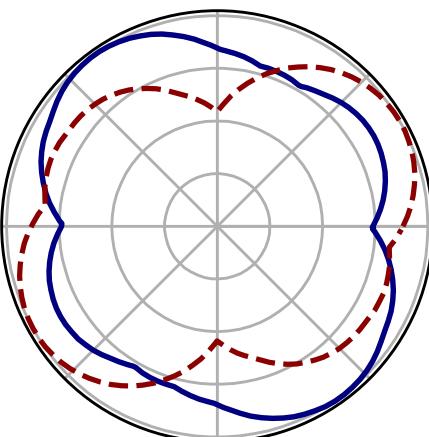
T = 0.4 s



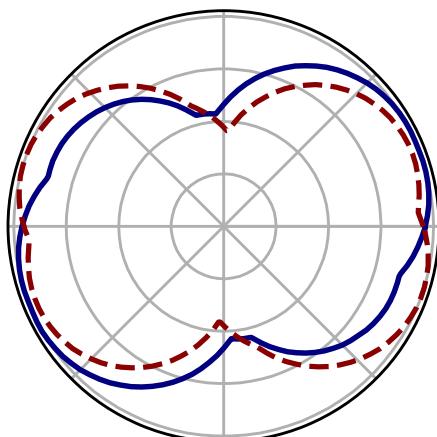
T = 0.8 s



T = 1.6 s

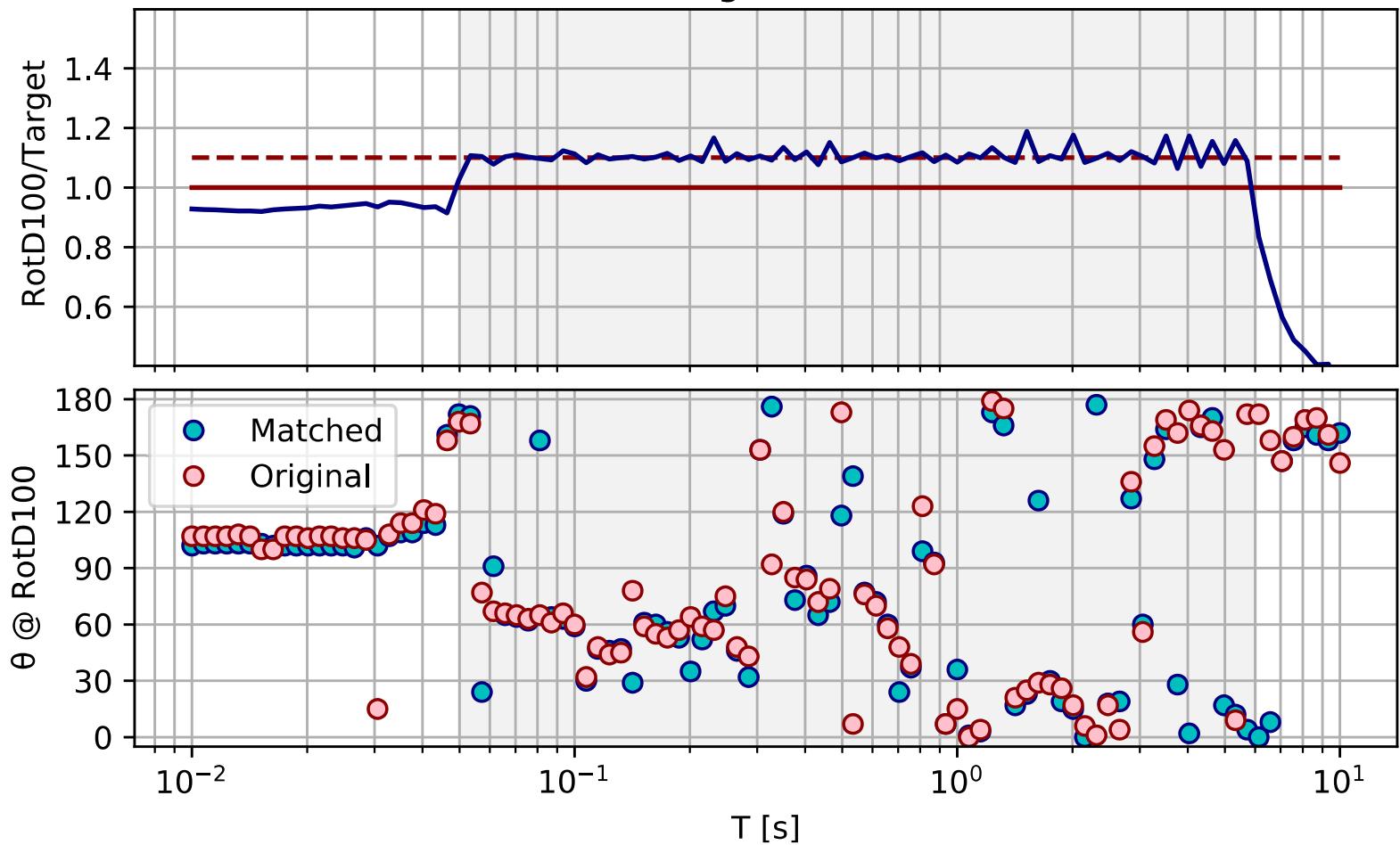


T = 3.8 s

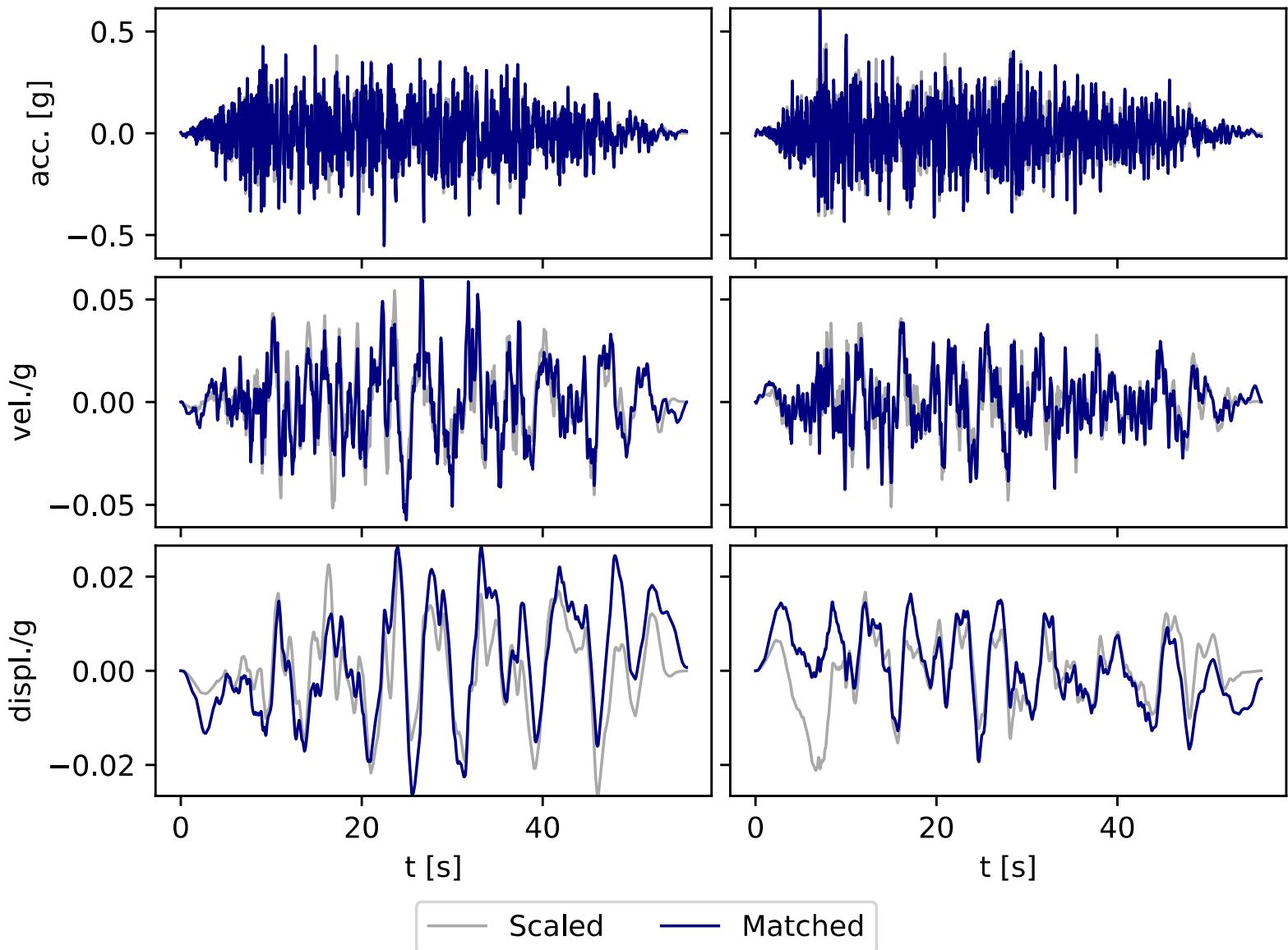


— Matched    - - - Original

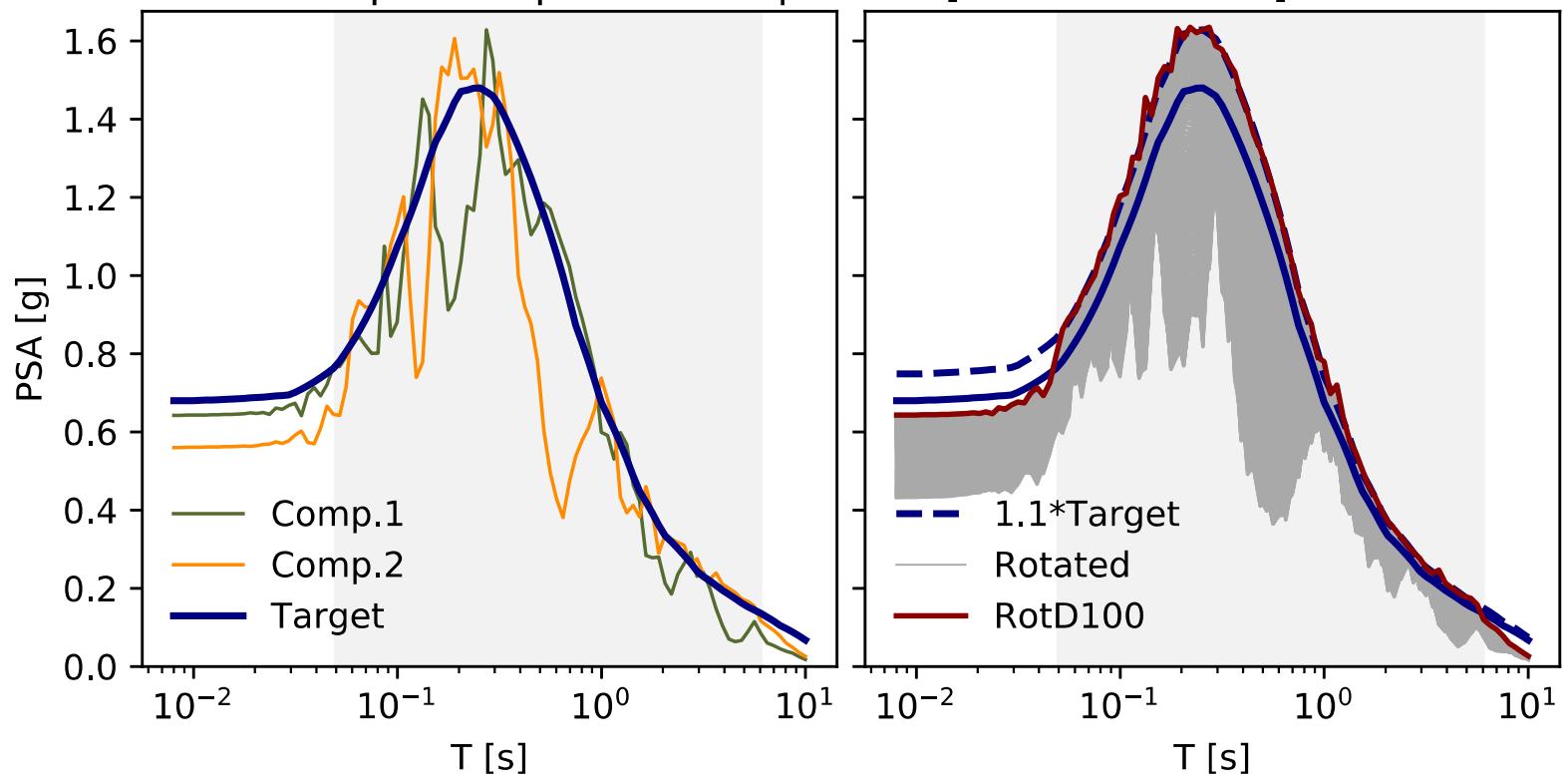
RotD100 ratios and angles [NGA.RSN.3757]



Time Histories Comparison [NGA.RSN.3757]

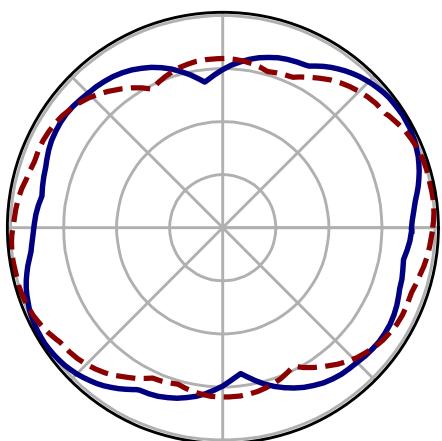


### Response Spectra Comparison [NGA.RSN.3863]

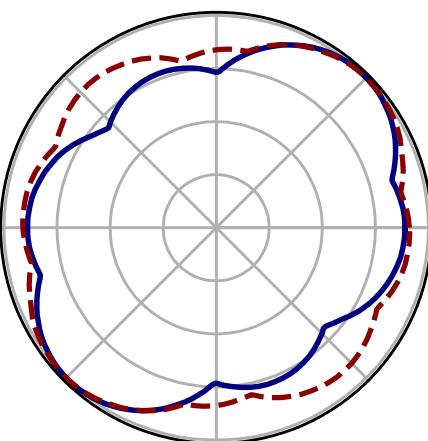


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.3863]

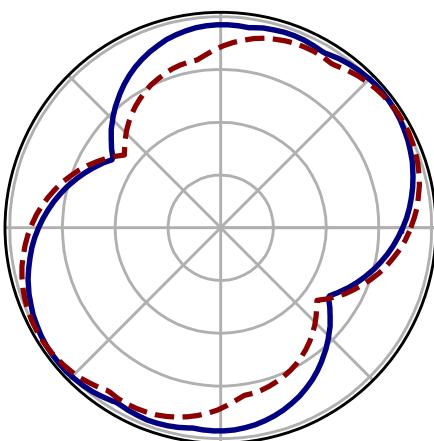
T = 0.1 s



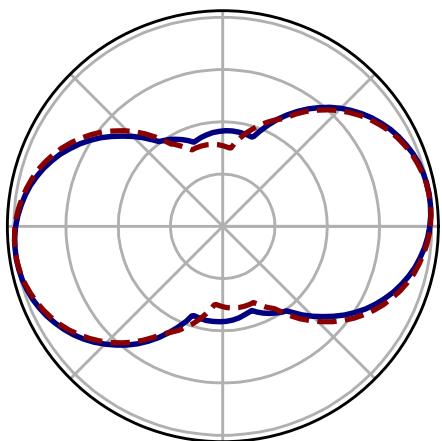
T = 0.1 s



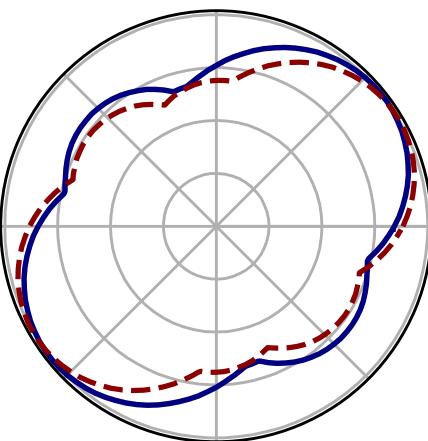
T = 0.3 s



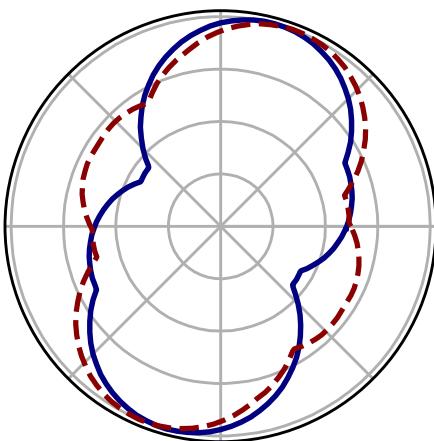
T = 0.7 s



T = 1.5 s

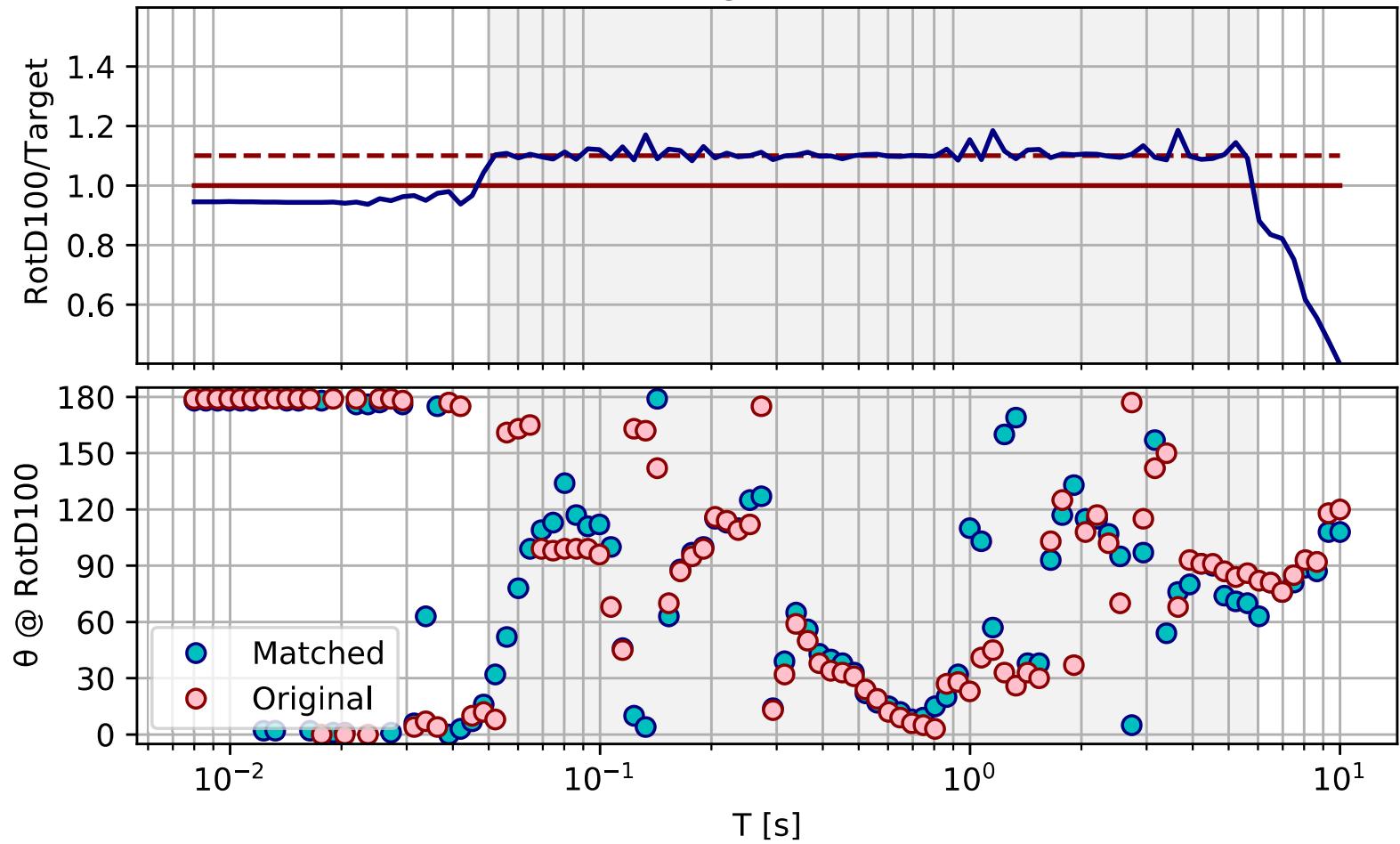


T = 3.6 s

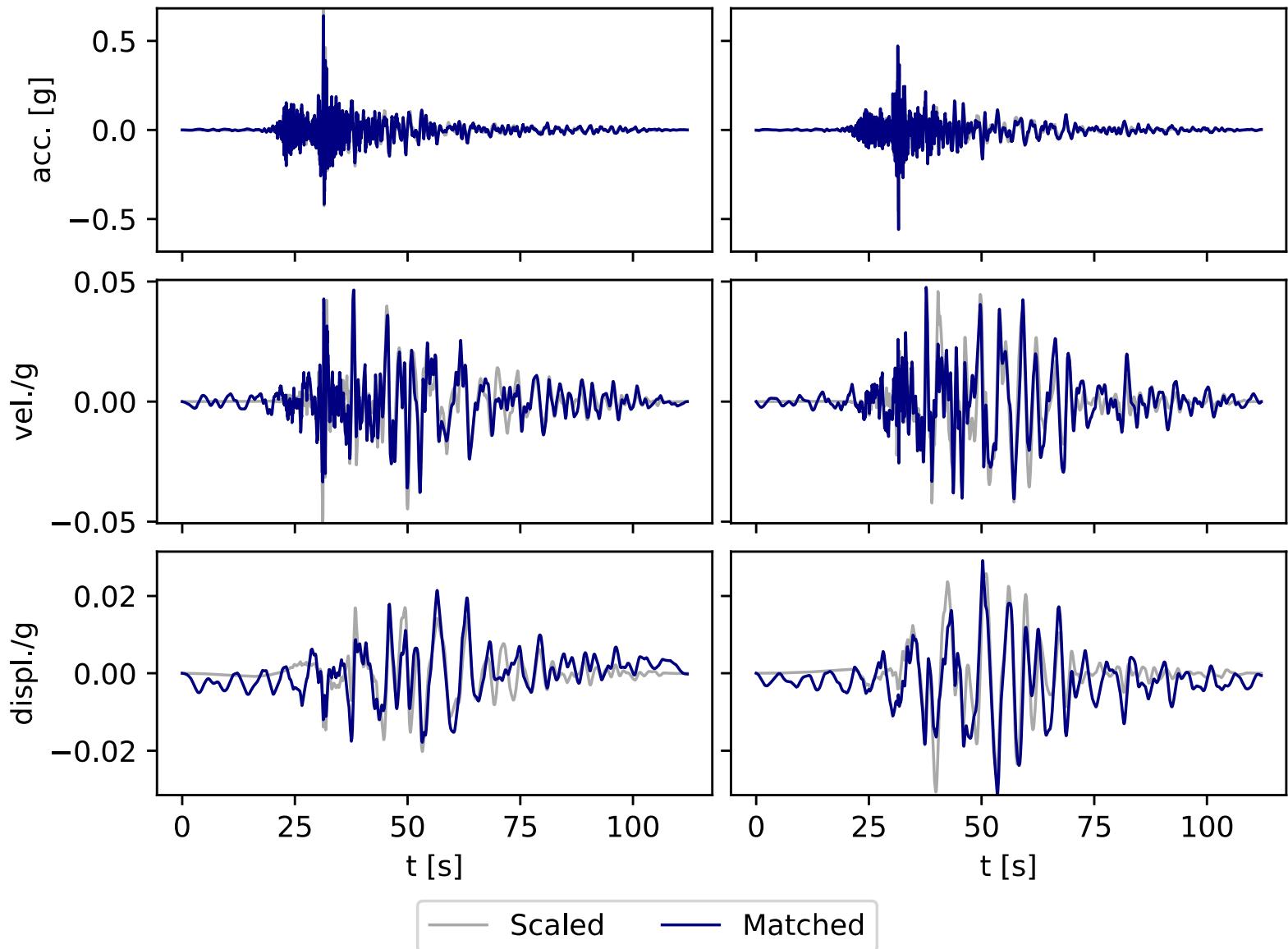


— Matched    - - Original

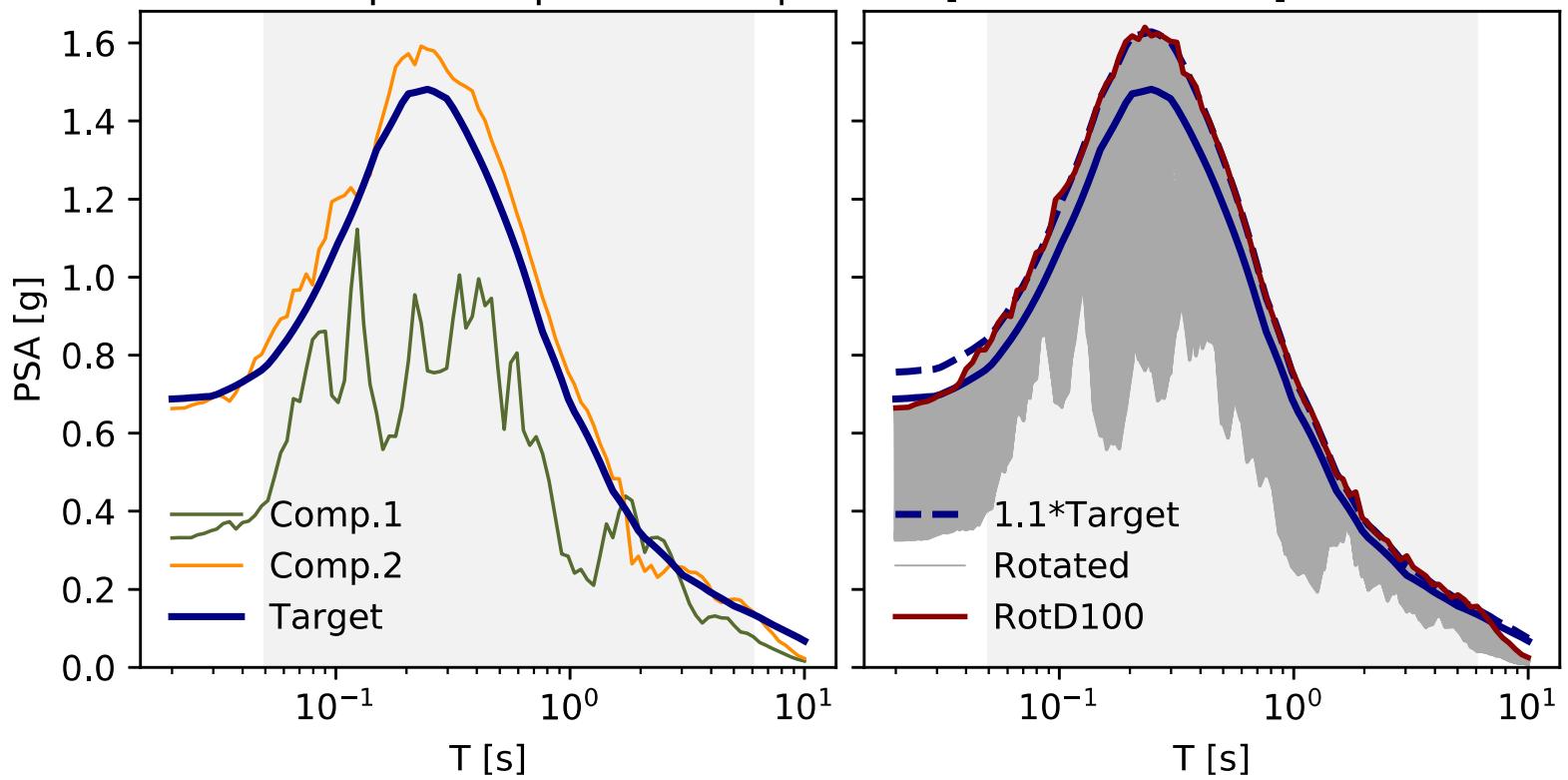
### RotD100 ratios and angles [NGA.RSN.3863]



Time Histories Comparison [NGA.RSN.3863]

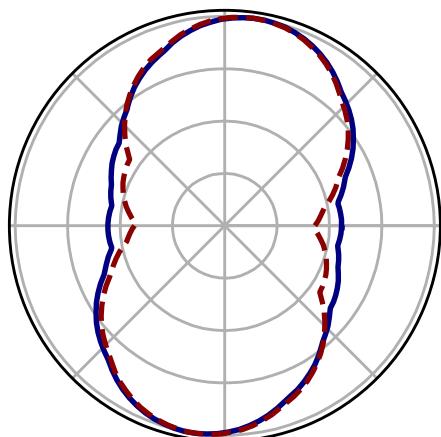


### Response Spectra Comparison [NGA.RSN.5779]

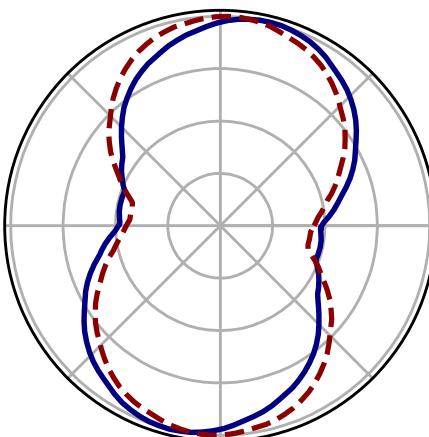


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.5779]

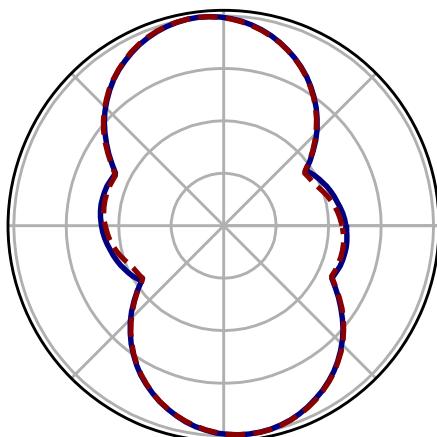
T = 0.1 s



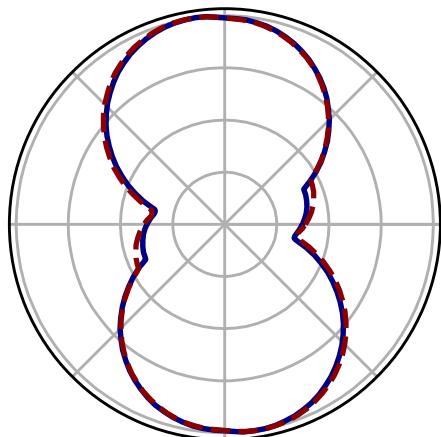
T = 0.2 s



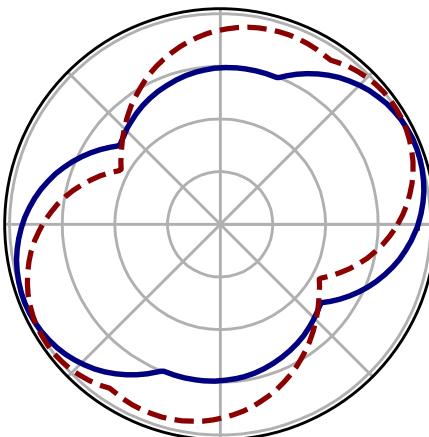
T = 0.5 s



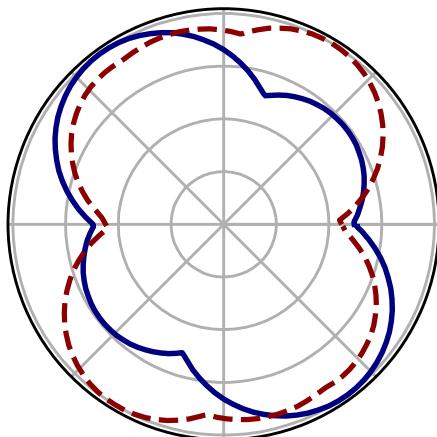
T = 1.0 s



T = 2.0 s

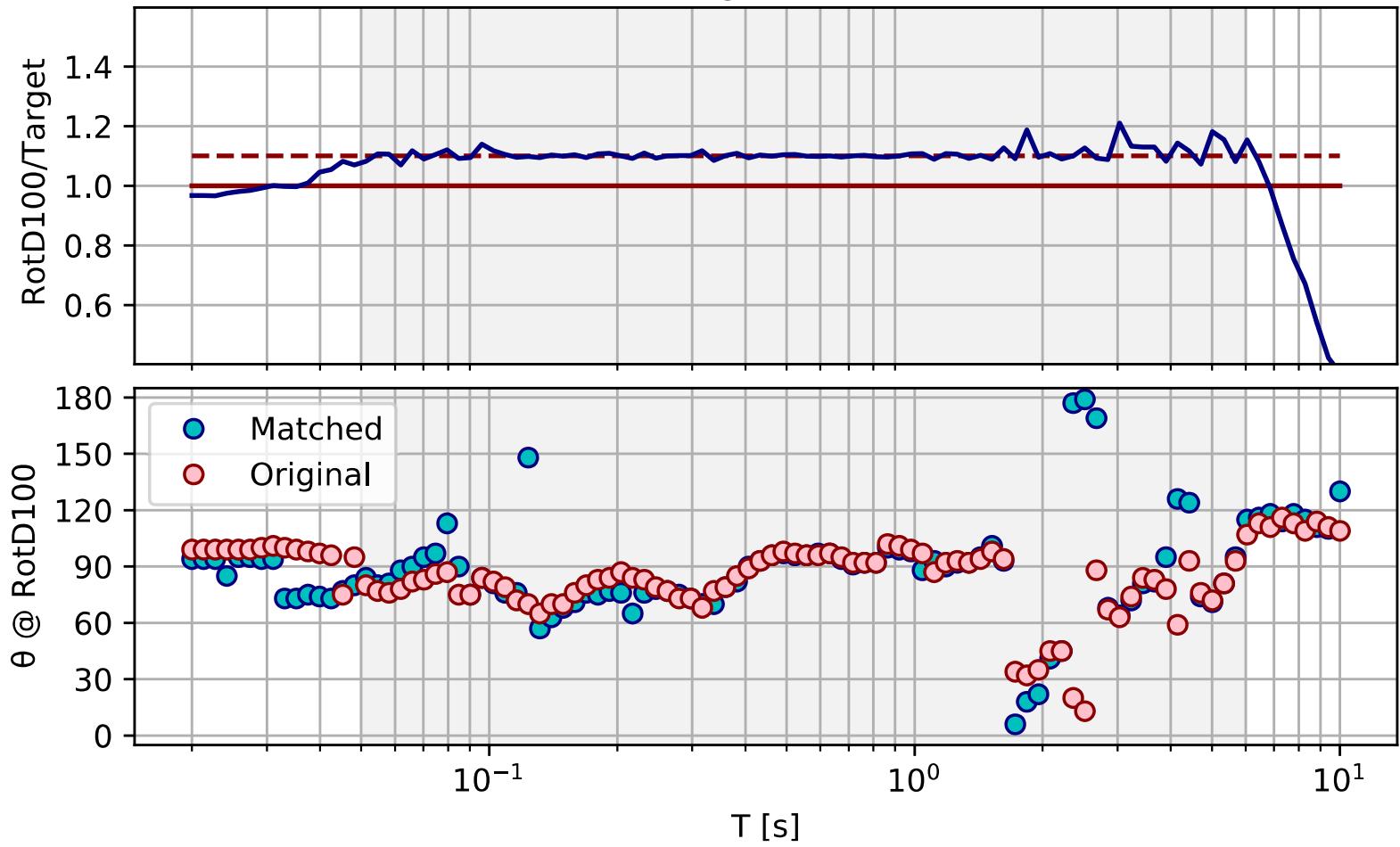


T = 4.2 s

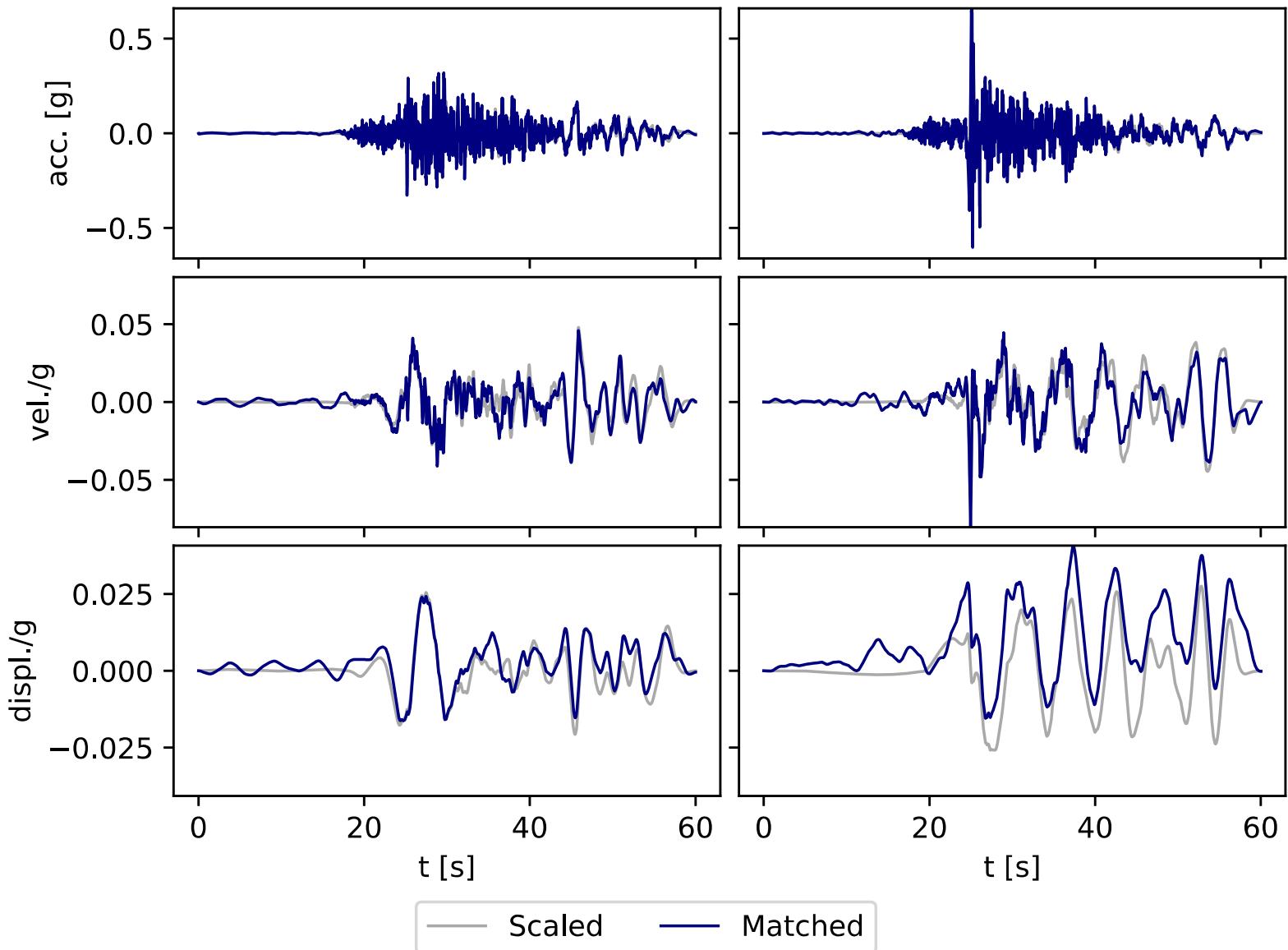


— Matched    - - - Original

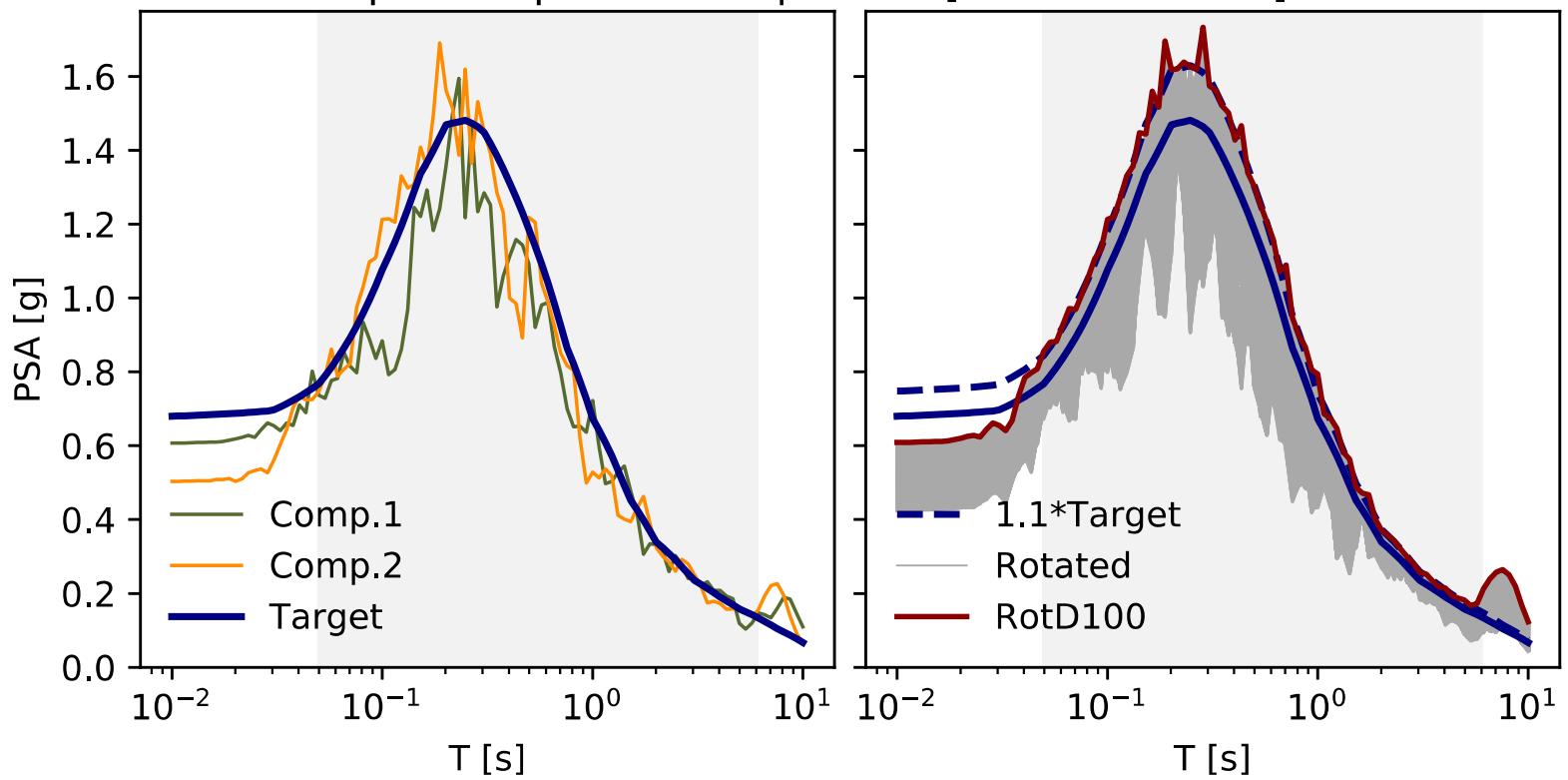
RotD100 ratios and angles [NGA.RSN.5779]



Time Histories Comparison [NGA.RSN.5779]

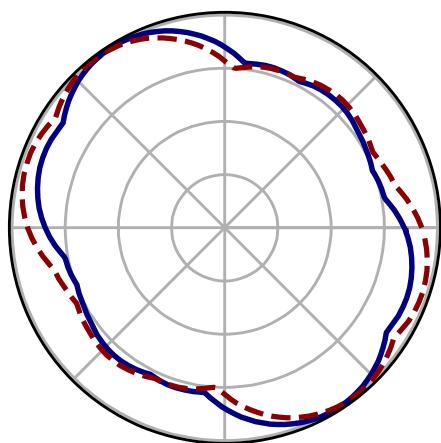


### Response Spectra Comparison [NGA.RSN.5823]

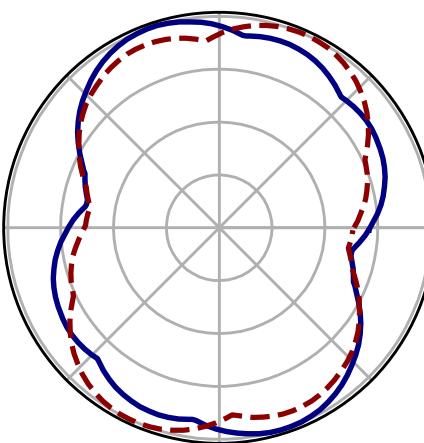


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.5823]

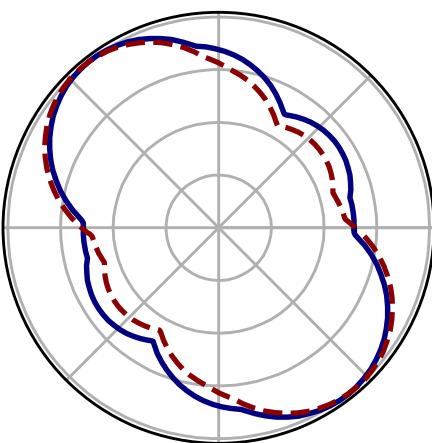
T = 0.1 s



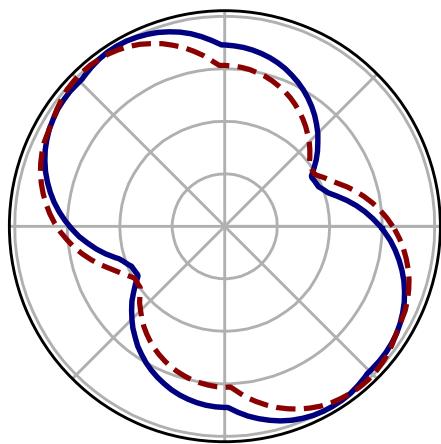
T = 0.1 s



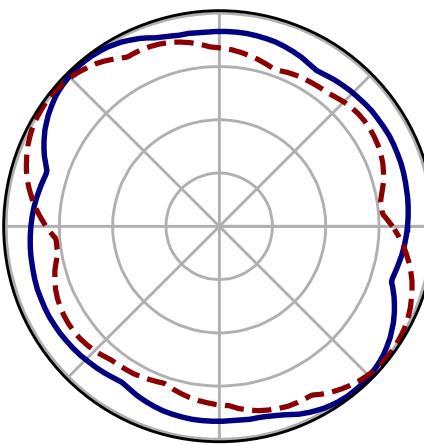
T = 0.4 s



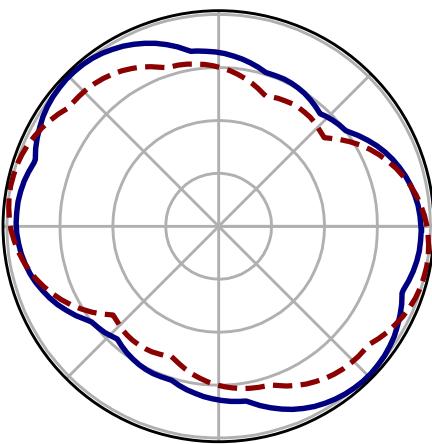
T = 0.8 s



T = 1.6 s

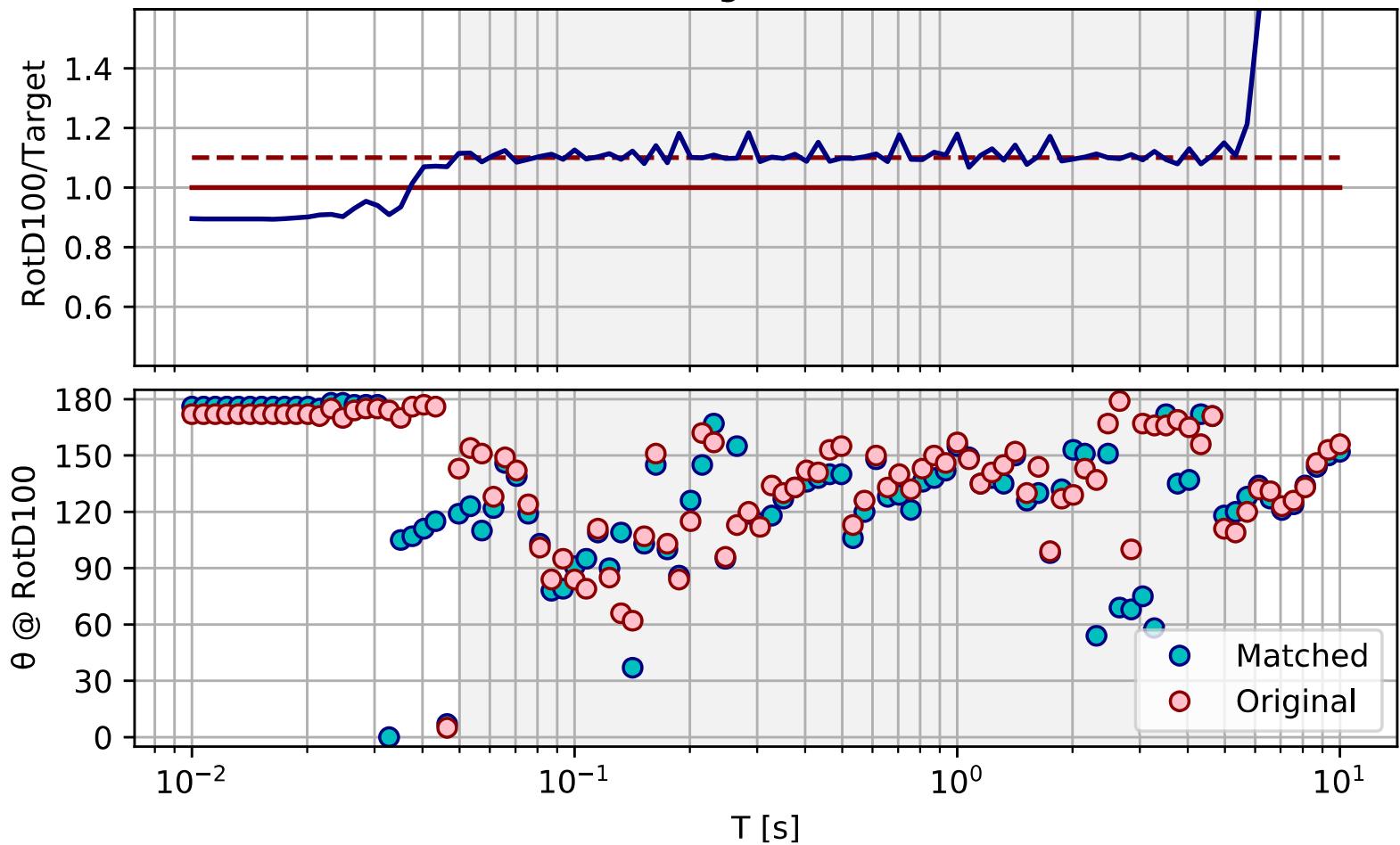


T = 3.8 s

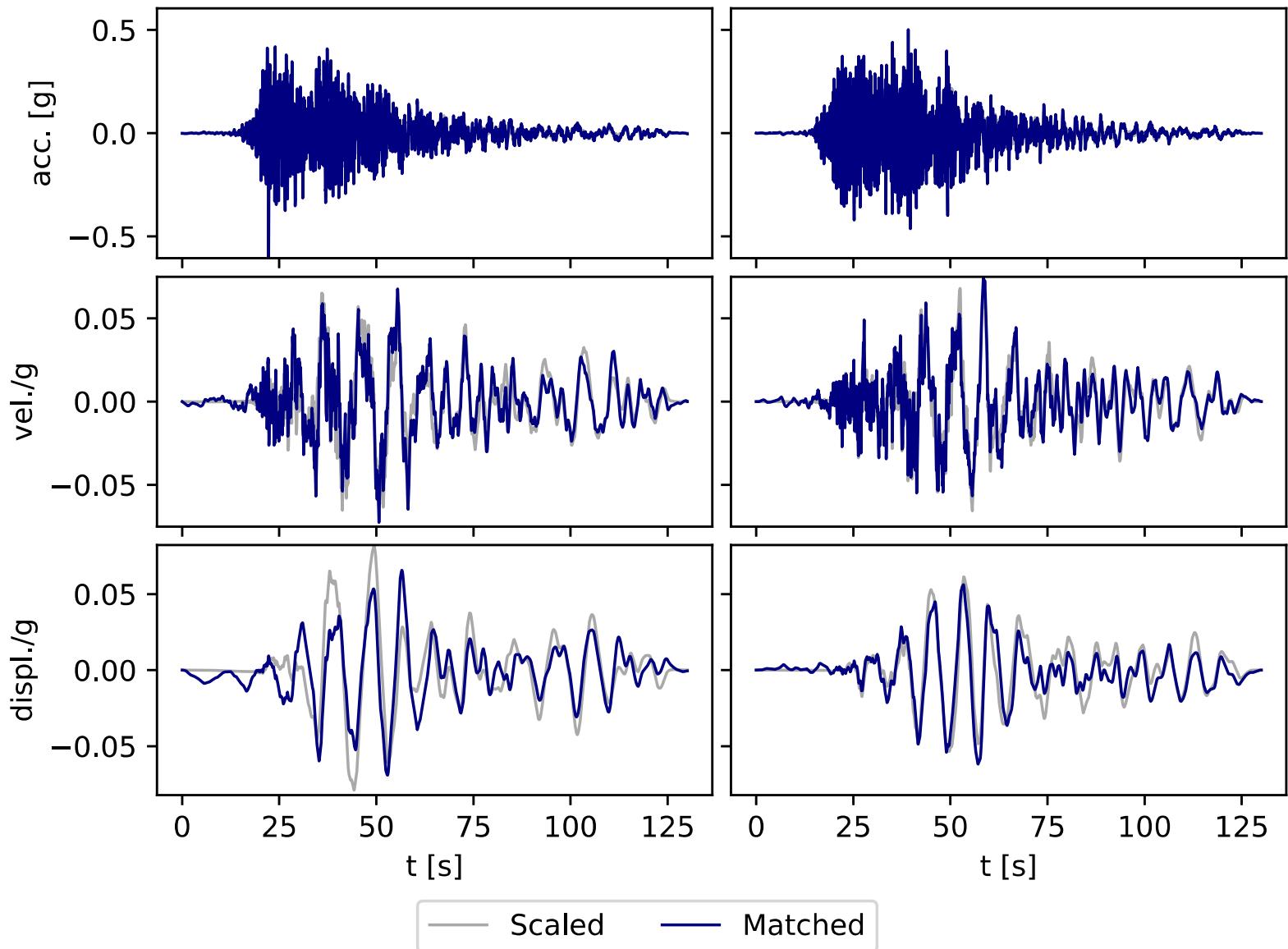


— Matched    - - - Original

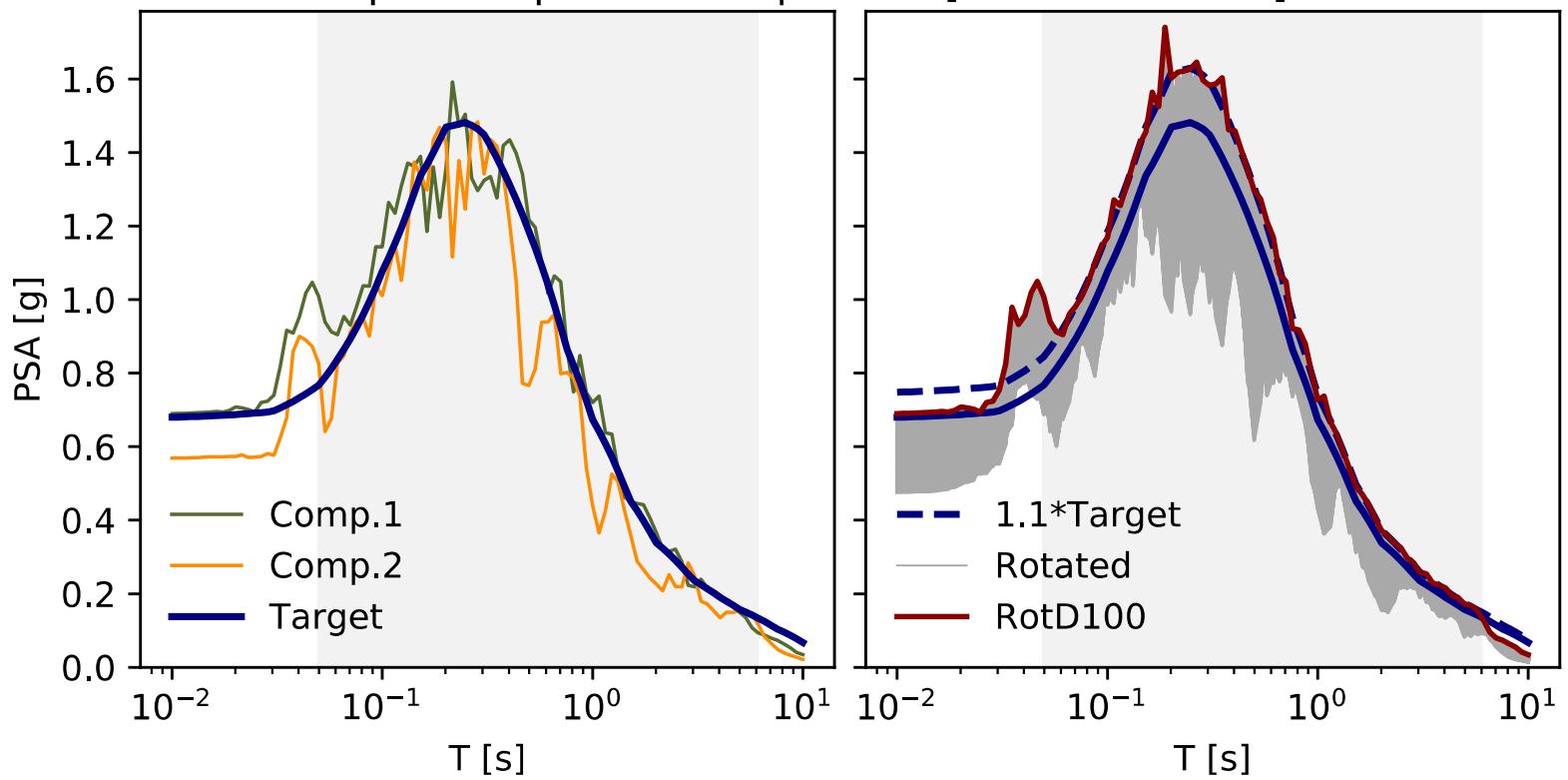
RotD100 ratios and angles [NGA.RSN.5823]



Time Histories Comparison [NGA.RSN.5823]



### Response Spectra Comparison [NGA.RSN.5827]

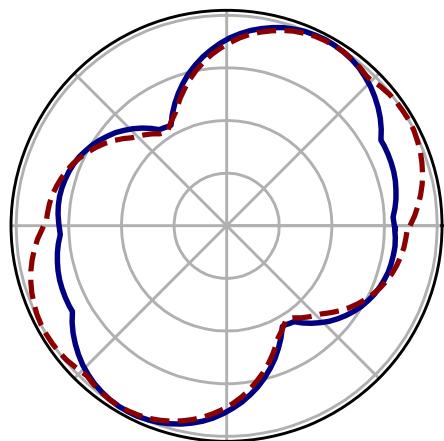
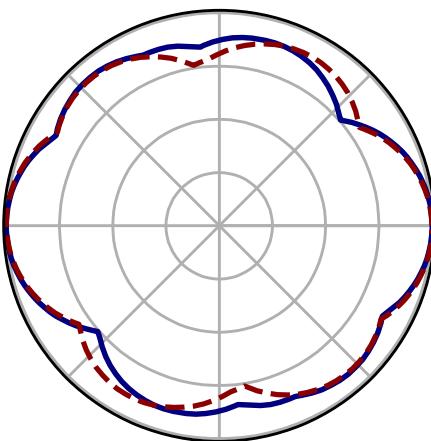
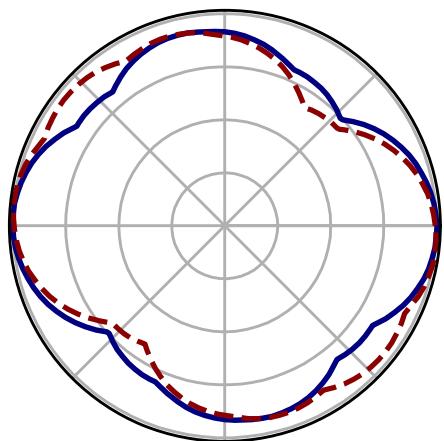


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.5827]

T = 0.1 s

T = 0.1 s

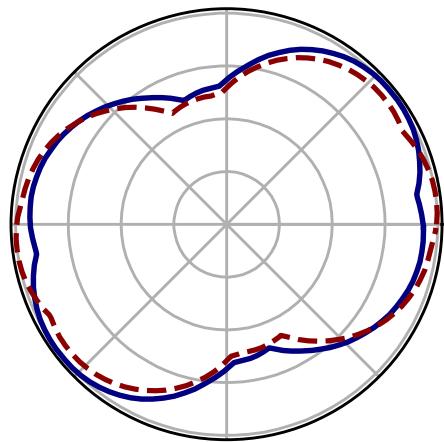
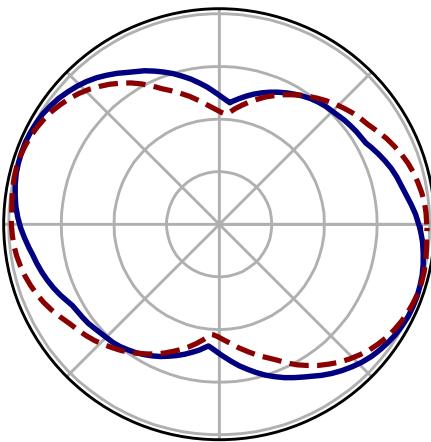
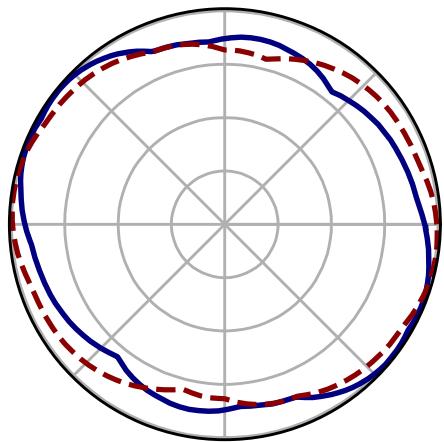
T = 0.4 s



T = 0.8 s

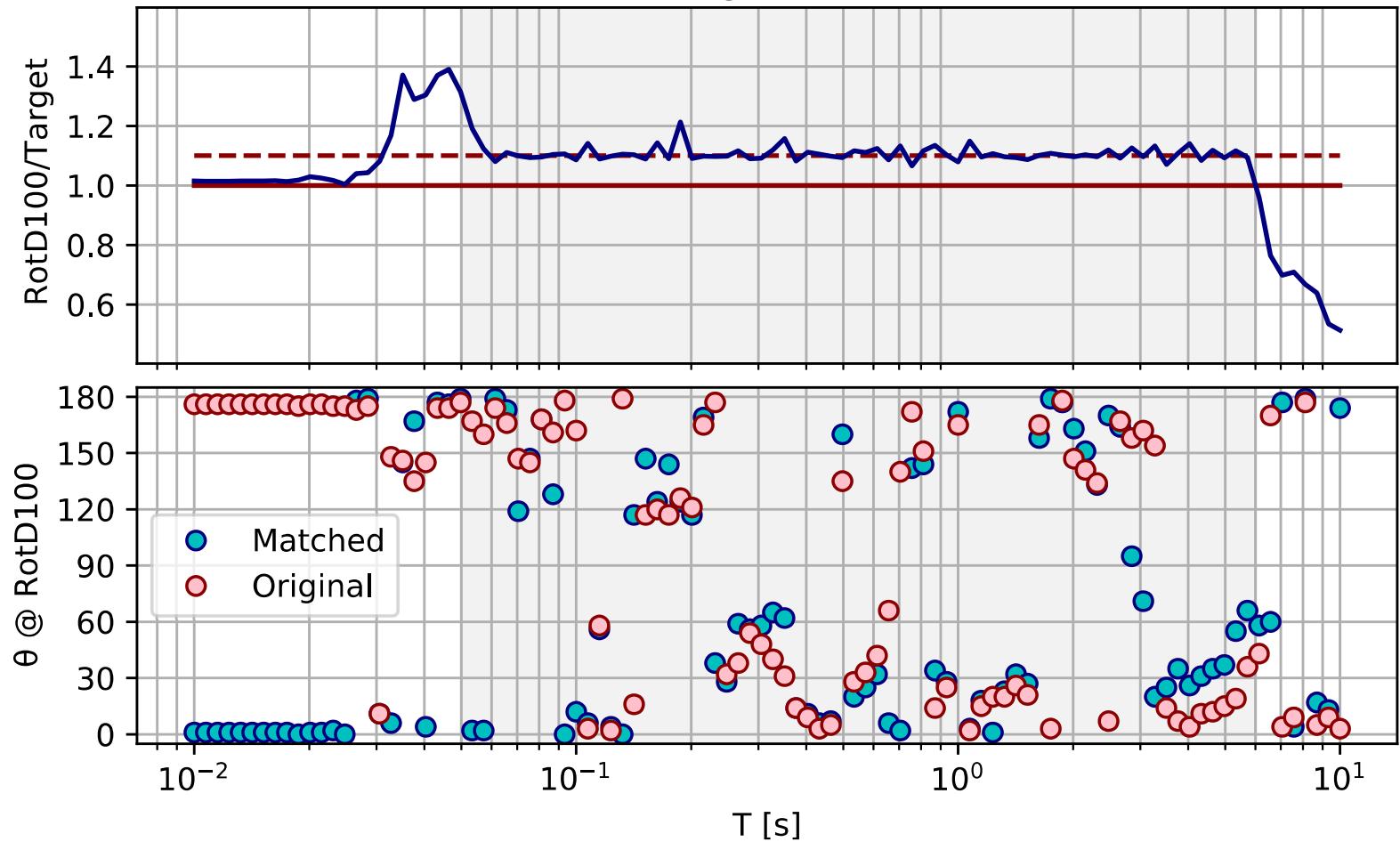
T = 1.6 s

T = 3.8 s

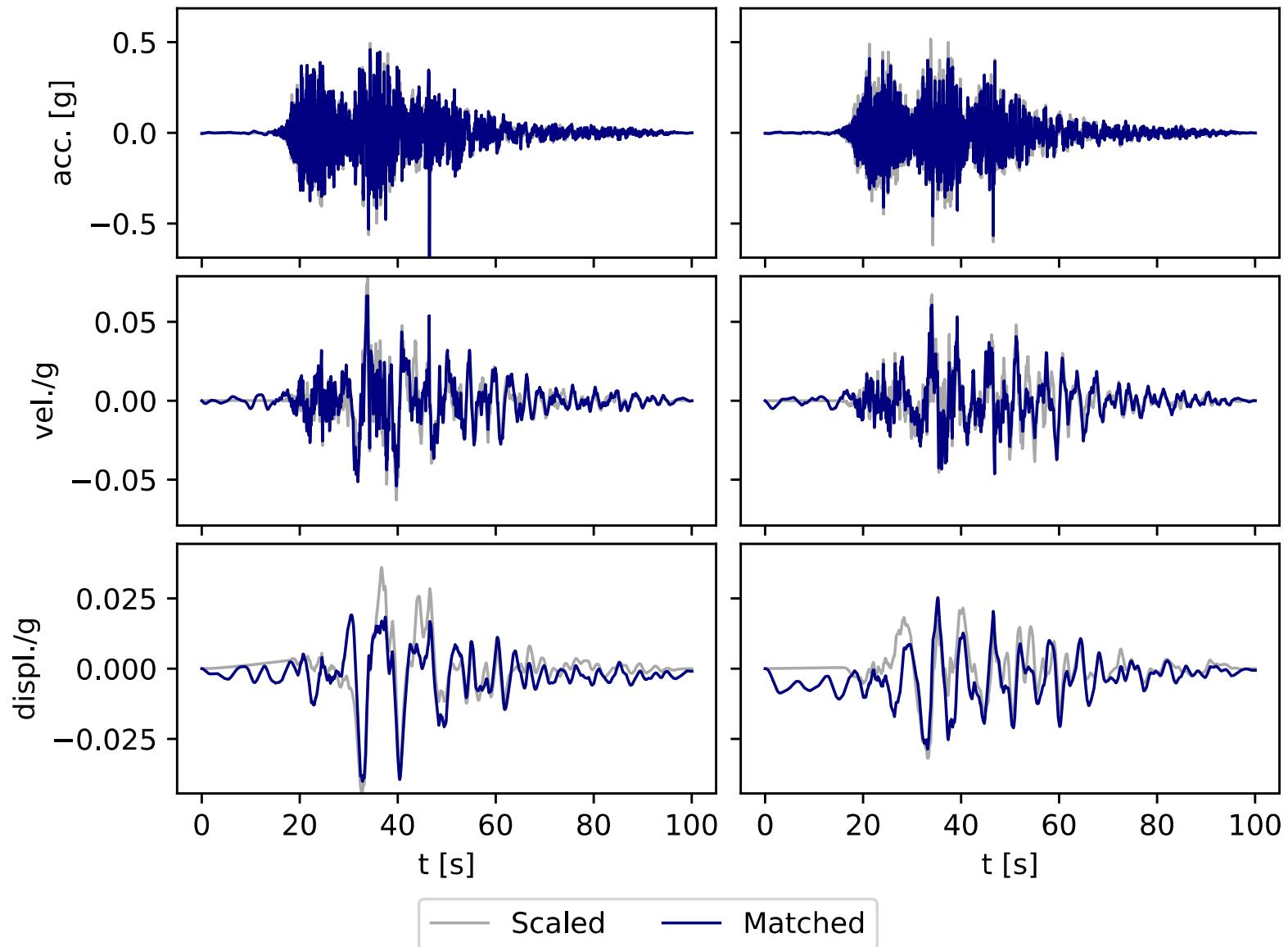


— Matched    - - Original

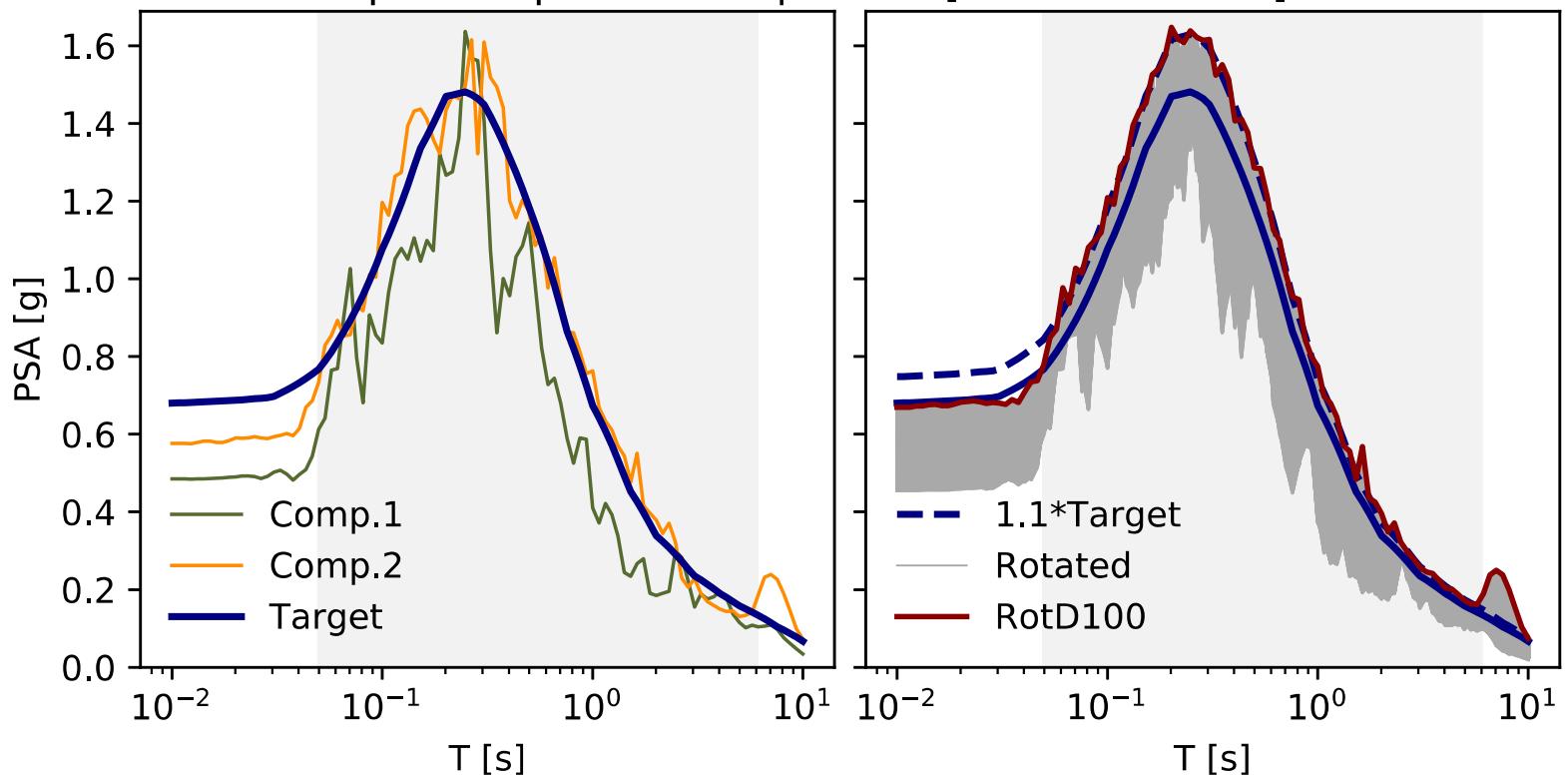
RotD100 ratios and angles [NGA.RSN.5827]



Time Histories Comparison [NGA.RSN.5827]

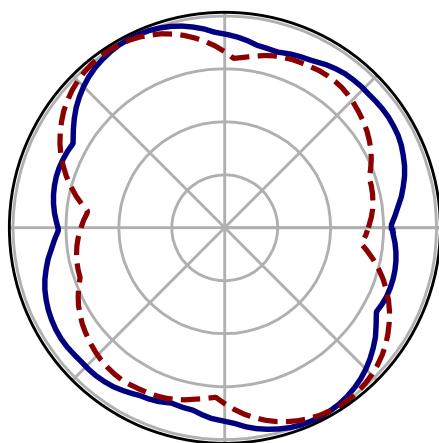


### Response Spectra Comparison [NGA.RSN.5975]

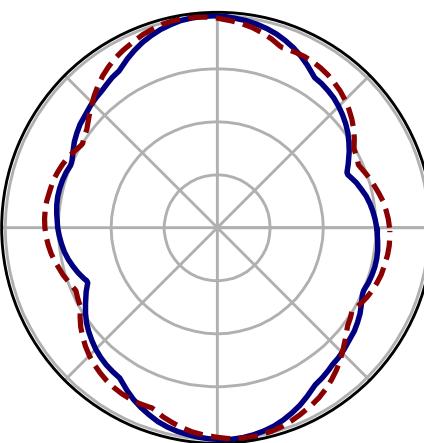


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.5975]

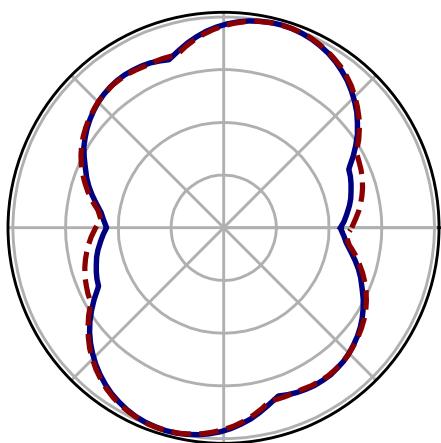
T = 0.1 s



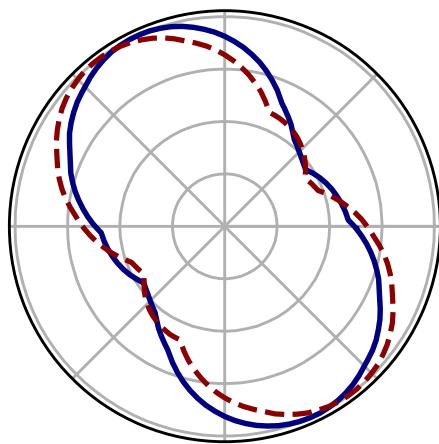
T = 0.1 s



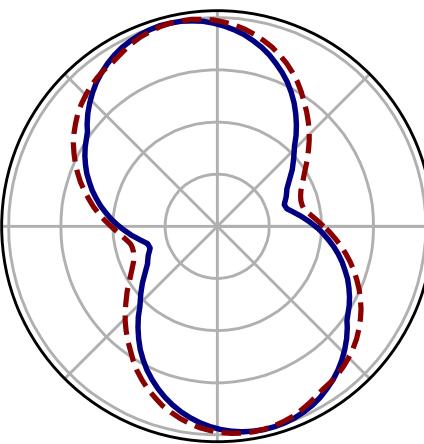
T = 0.4 s



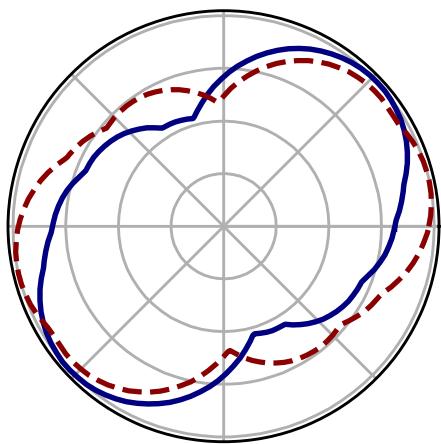
T = 0.8 s



T = 1.6 s

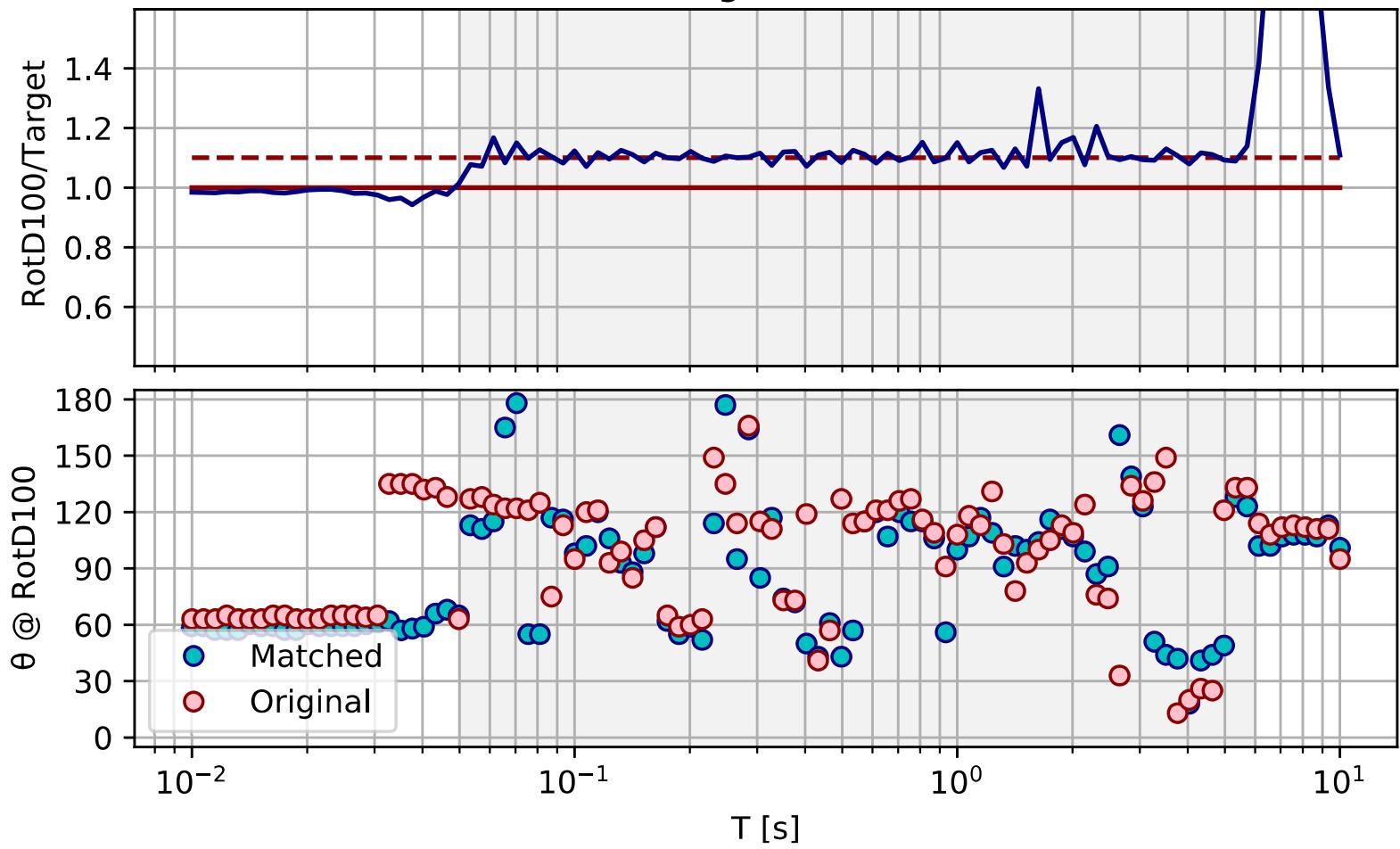


T = 3.8 s

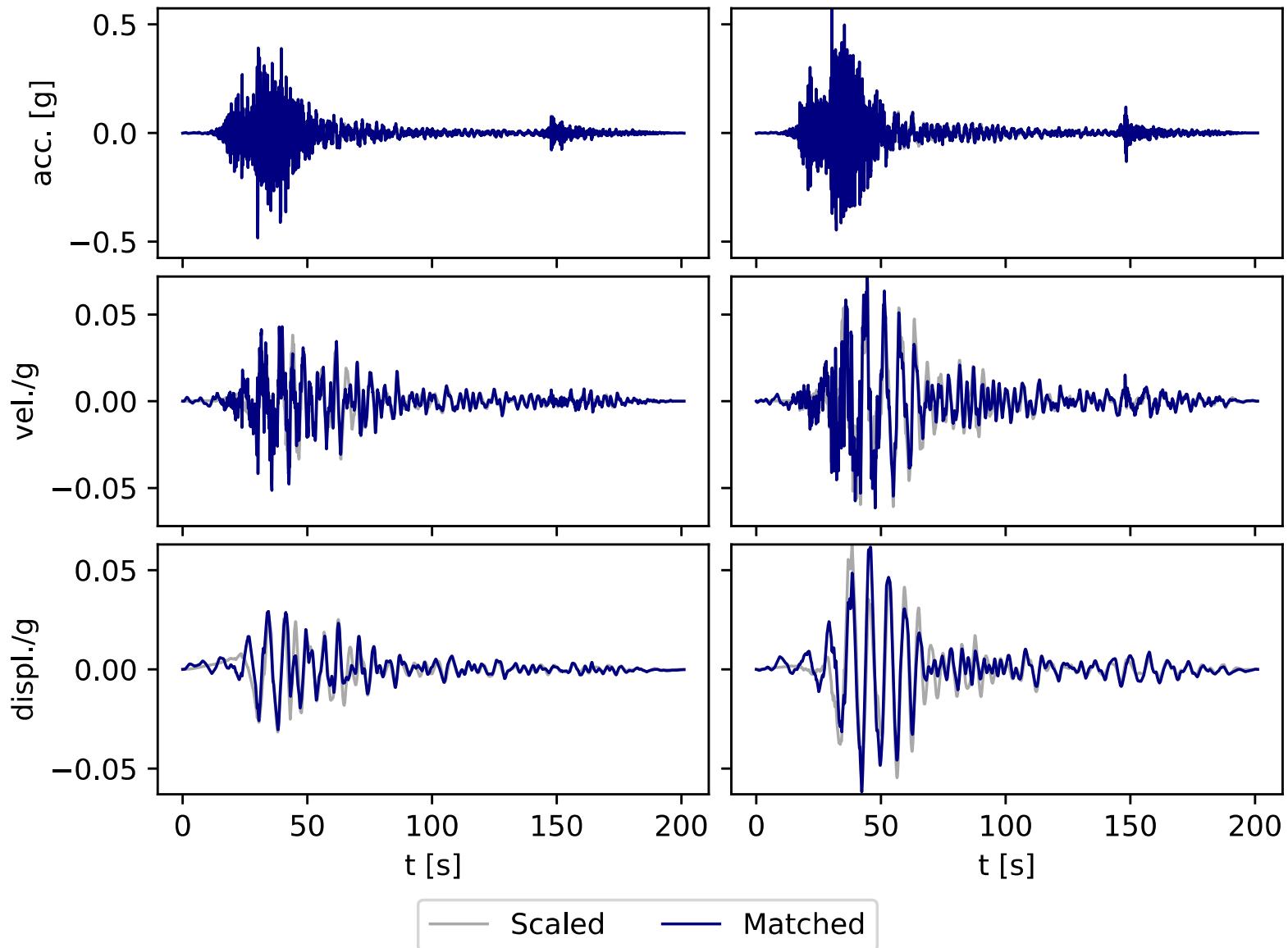


— Matched    - - Original

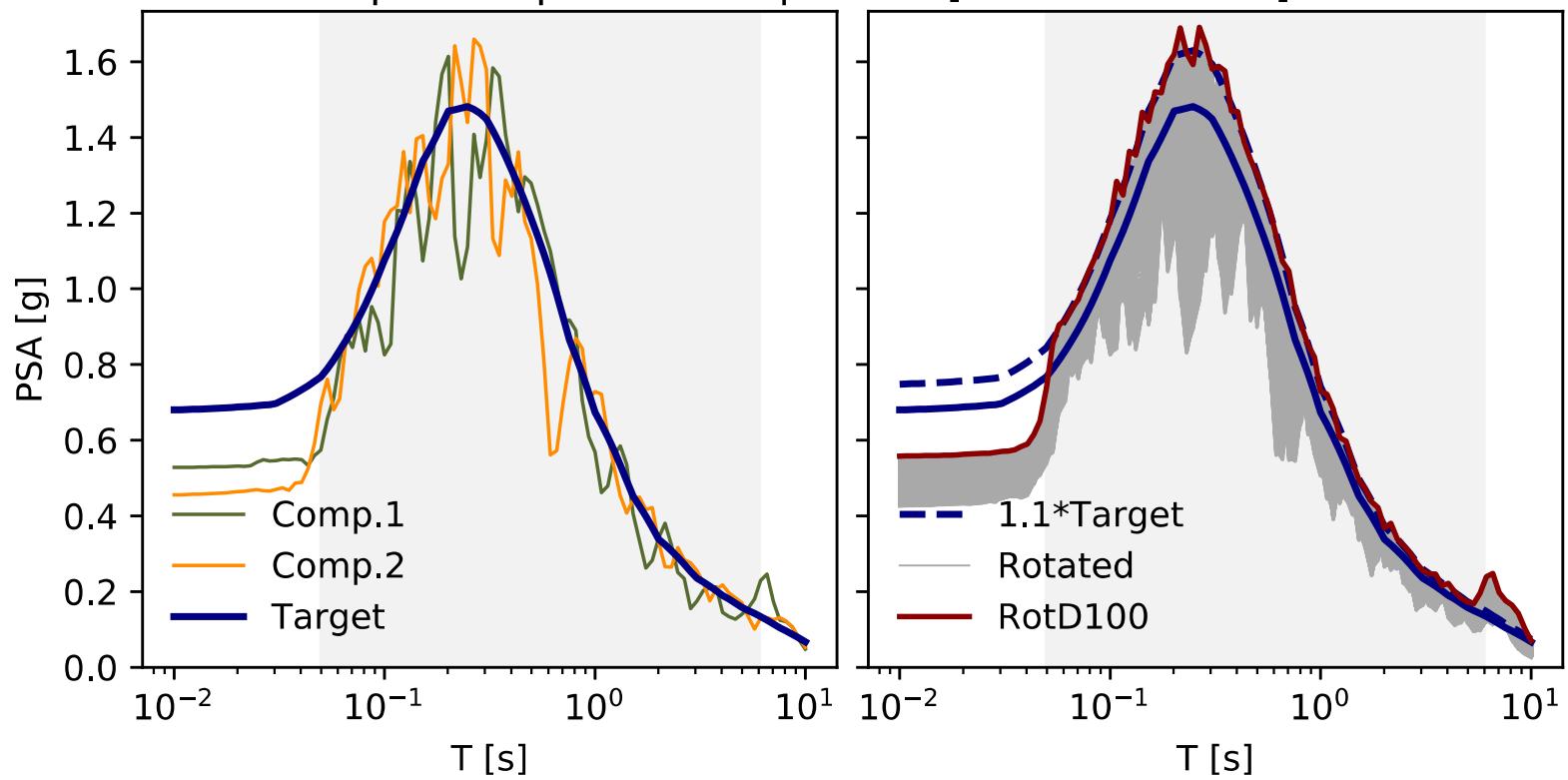
RotD100 ratios and angles [NGA.RSN.5975]



Time Histories Comparison [NGA.RSN.5975]

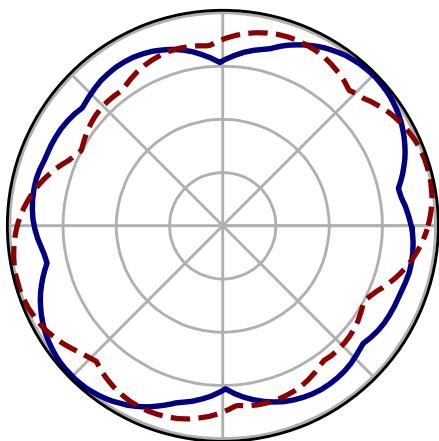


### Response Spectra Comparison [NGA.RSN.6005]

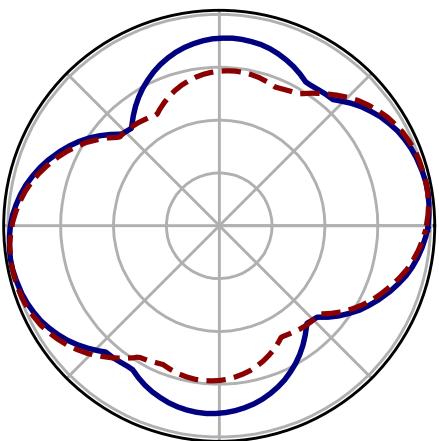


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.6005]

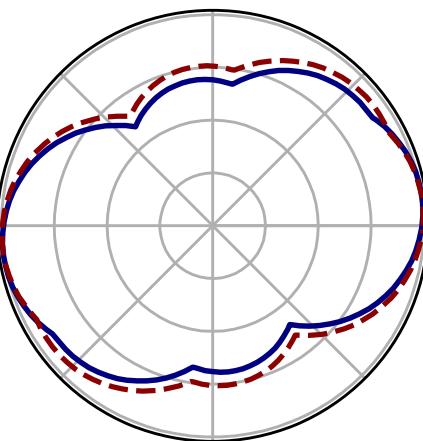
T = 0.1 s



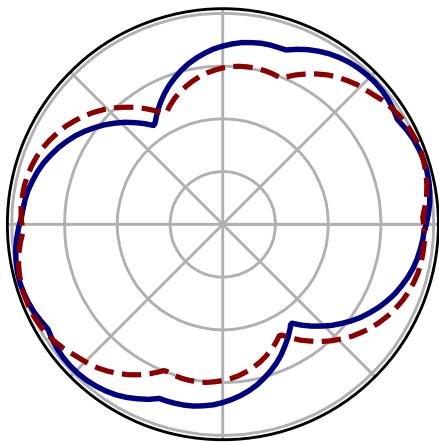
T = 0.1 s



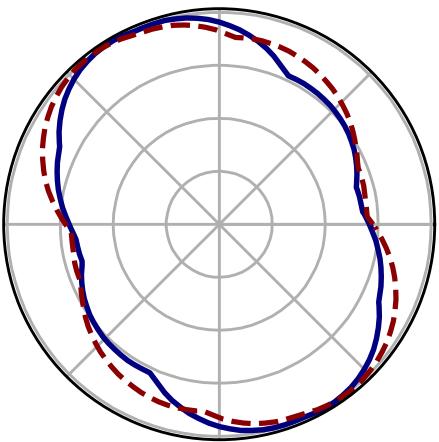
T = 0.4 s



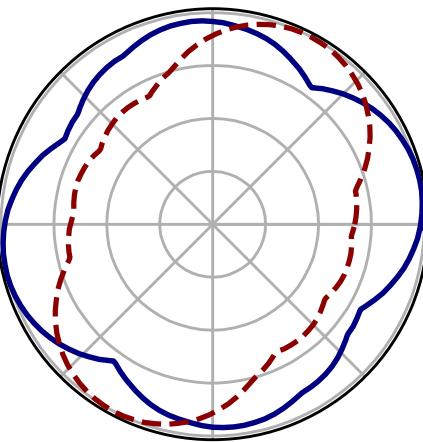
T = 0.8 s



T = 1.6 s

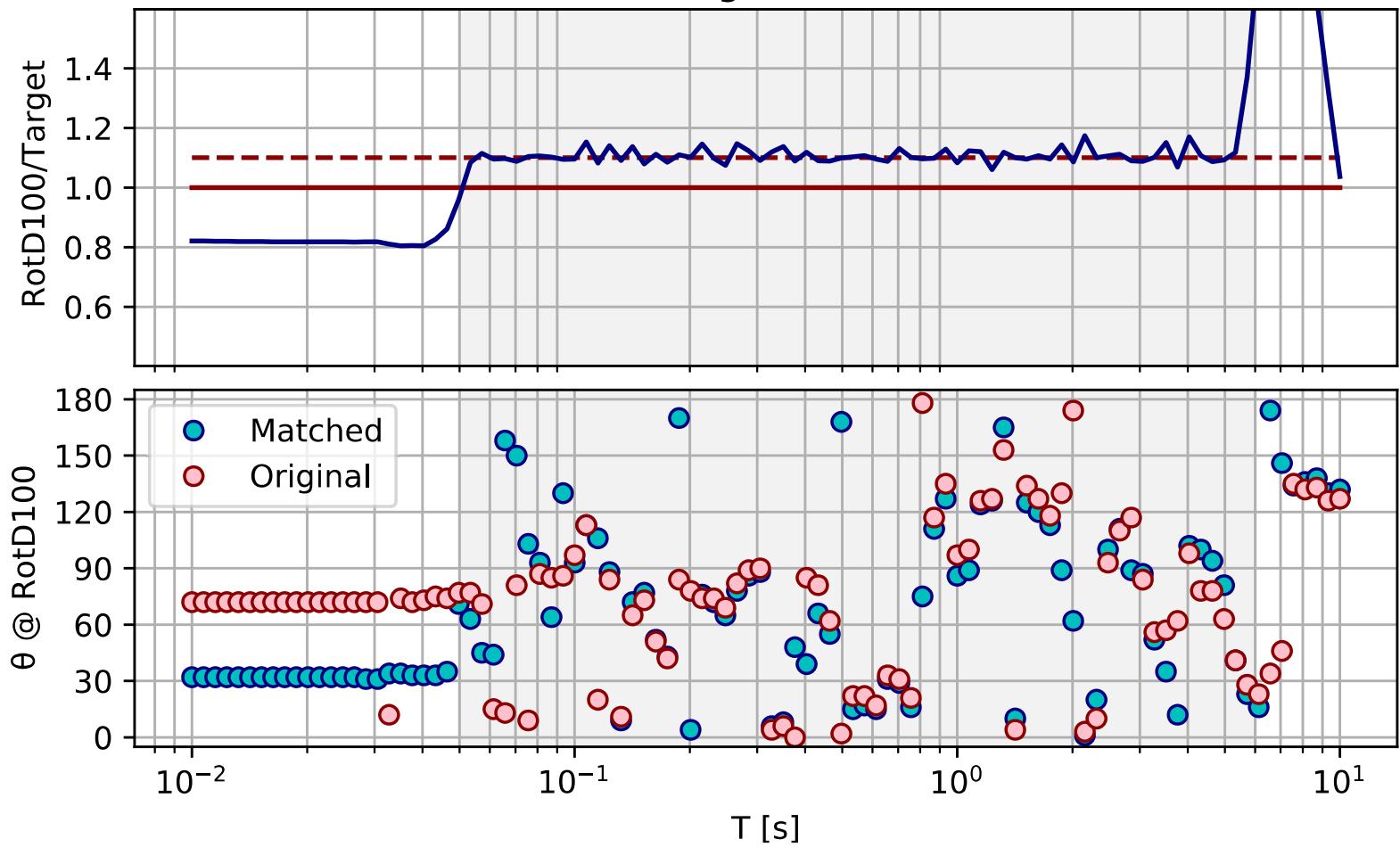


T = 3.8 s

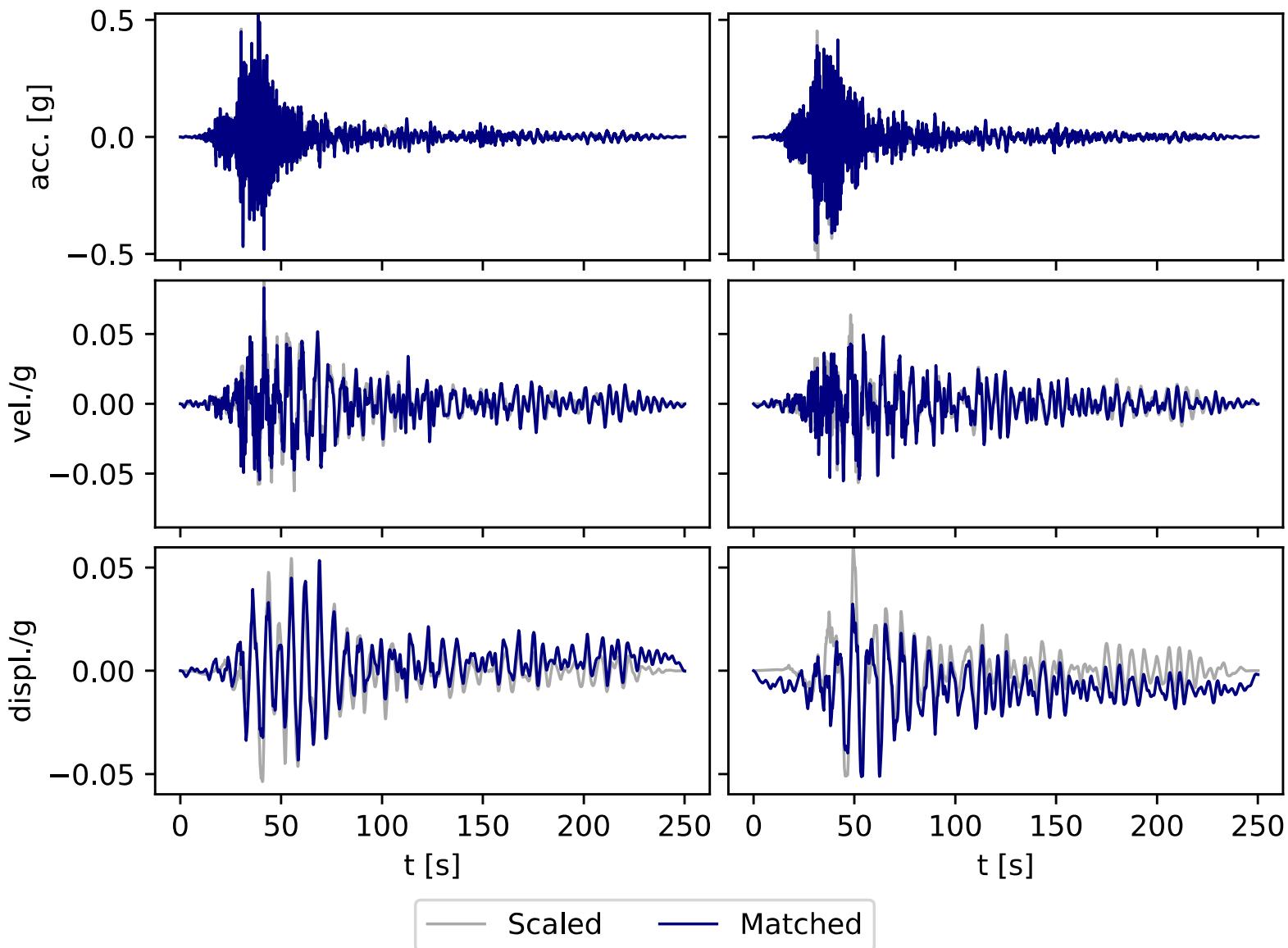


— Matched    - - Original

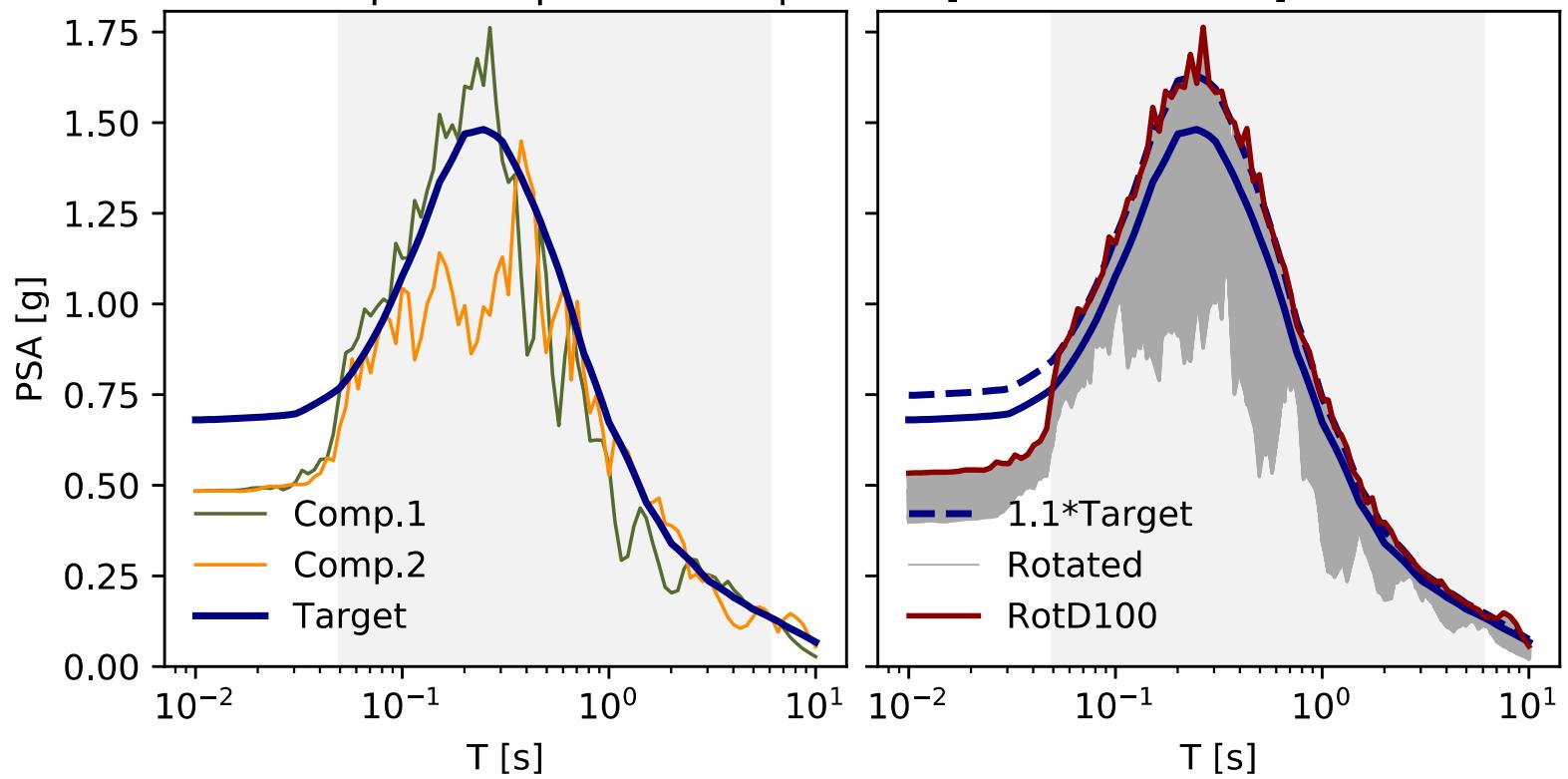
RotD100 ratios and angles [NGA.RSN.6005]



Time Histories Comparison [NGA.RSN.6005]

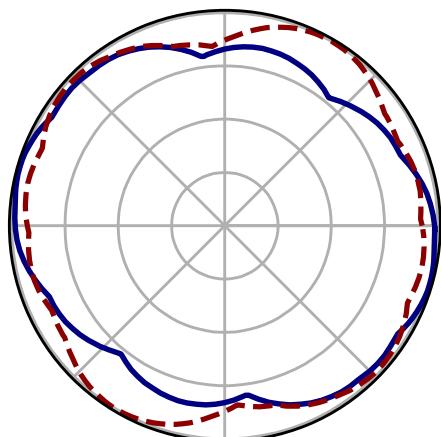


### Response Spectra Comparison [NGA.RSN.6013]

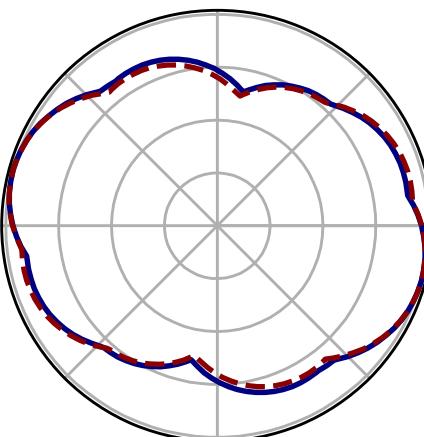


Normalized Spectral Accelerations @  $\theta$  [NGA.RSN.6013]

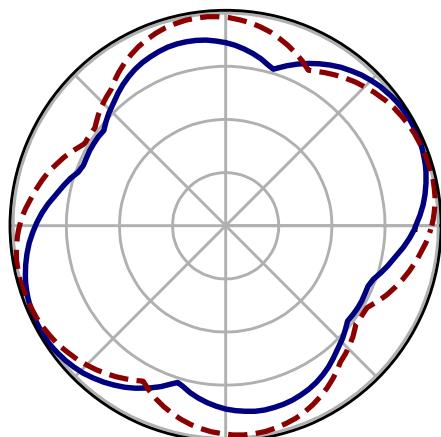
T = 0.1 s



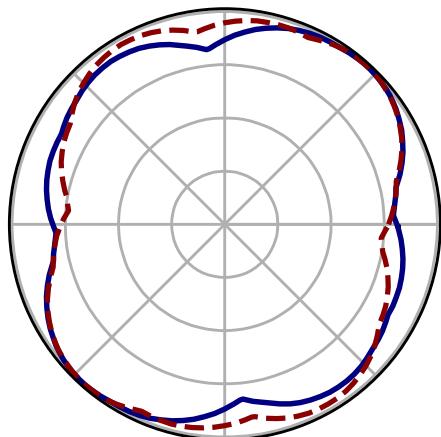
T = 0.1 s



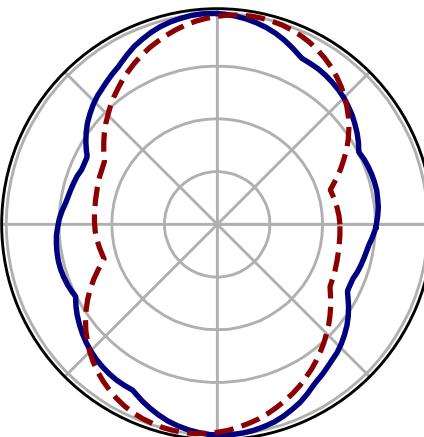
T = 0.4 s



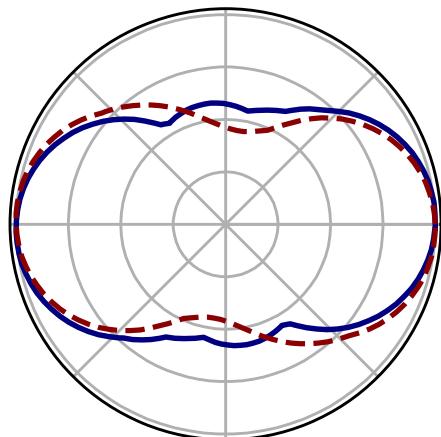
T = 0.8 s



T = 1.6 s

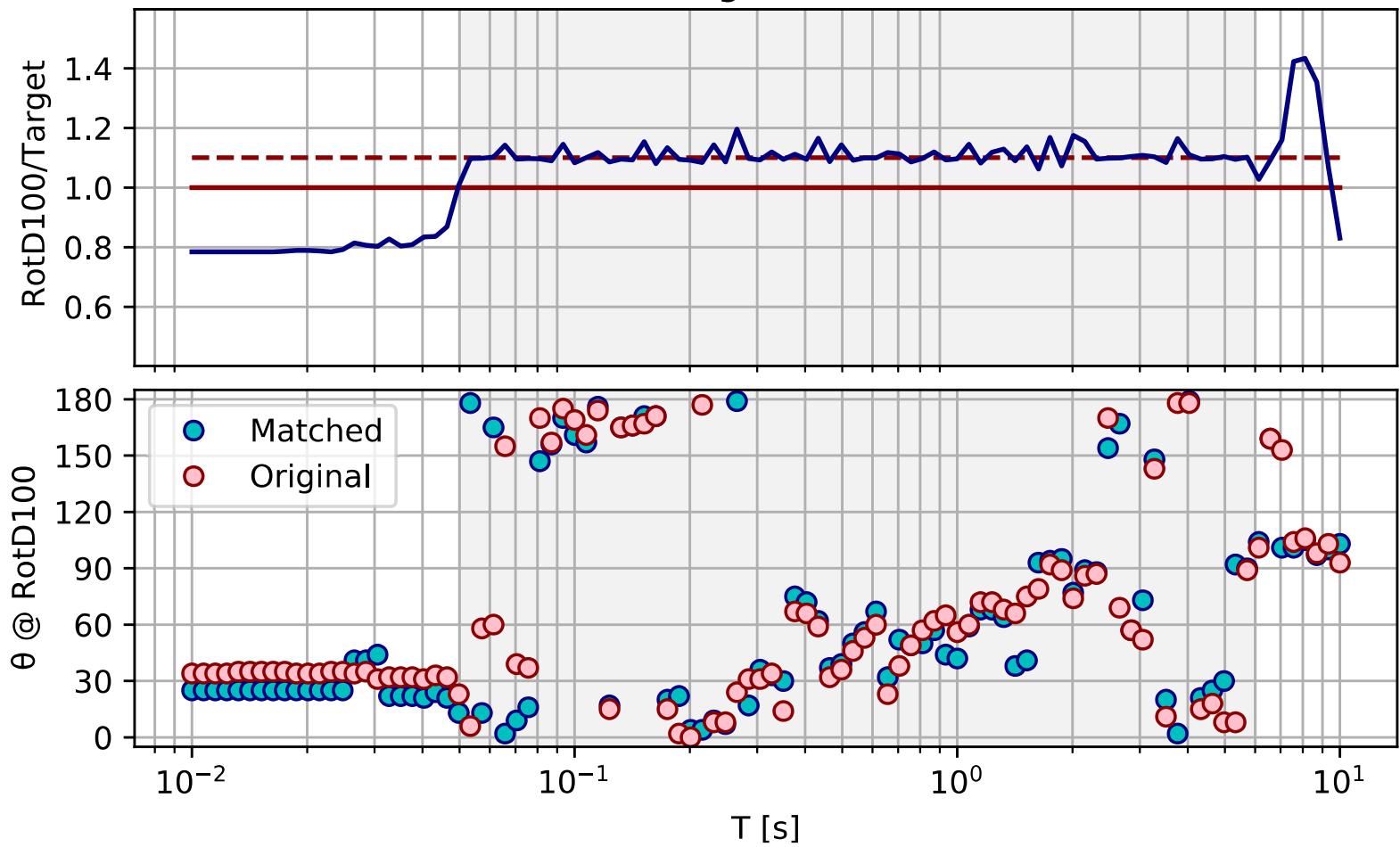


T = 3.8 s



— Matched    - - - Original

RotD100 ratios and angles [NGA.RSN.6013]



Time Histories Comparison [NGA.RSN.6013]

