Logic Tree of Tau Node for Crustal Source

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- List of Tau Models with TDIs for Crustal Sources
- Develop Logic Tree of Tau Models for Crustal Sources
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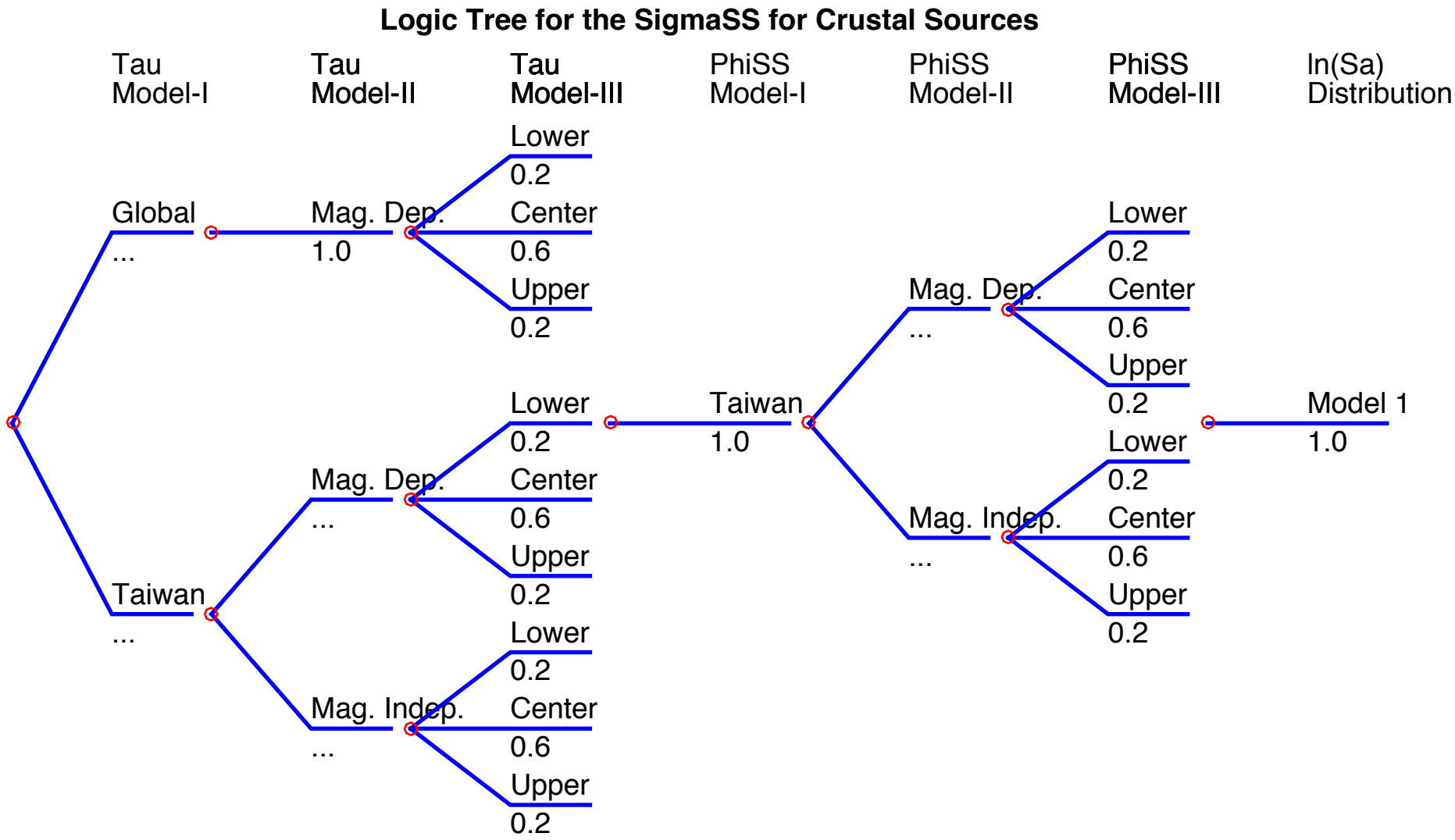
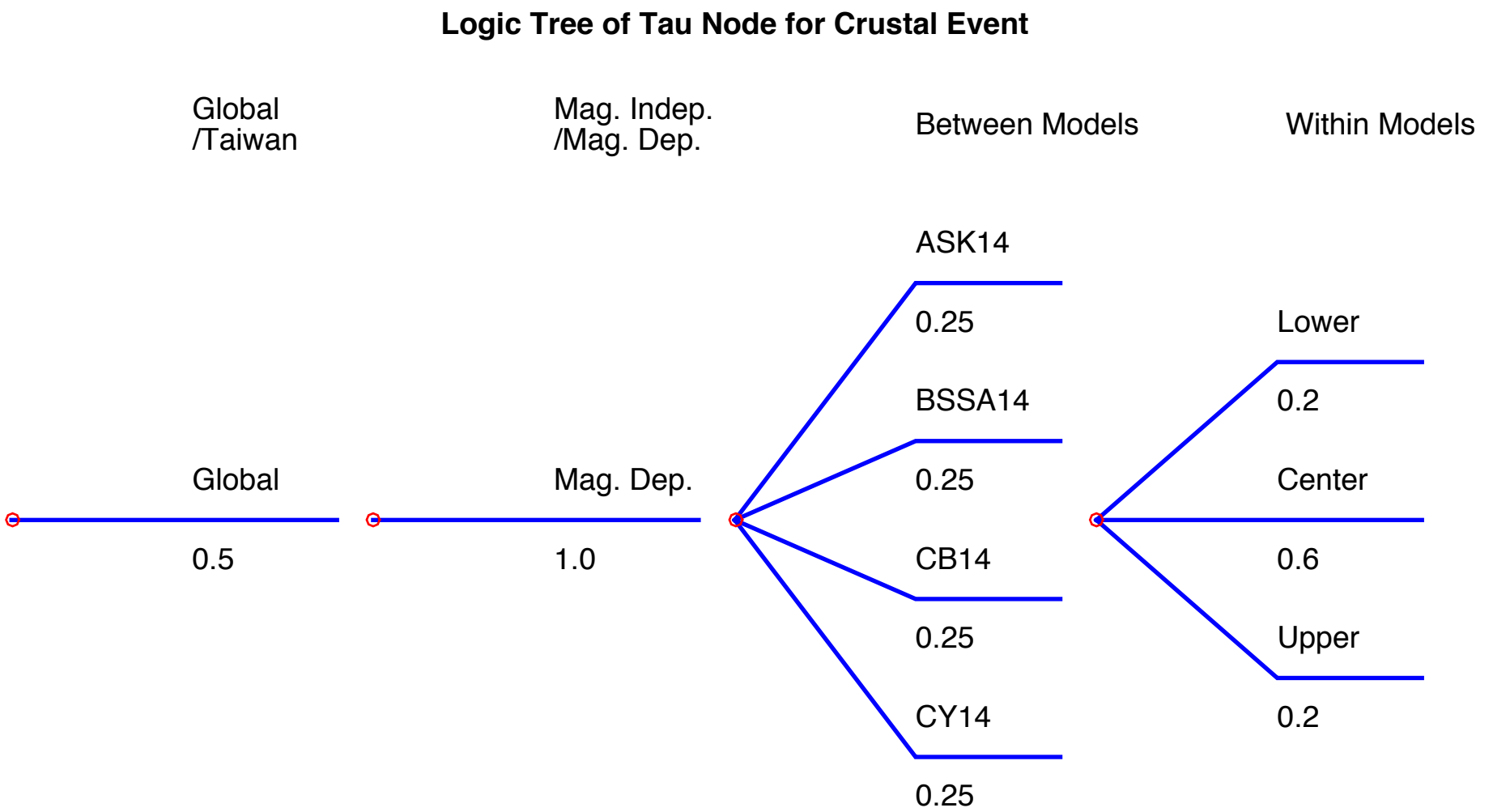
Logic Tree of the SigmaSS for Crustal Source



Logic Tree of Tau Node for Crustal Event – Global Branch

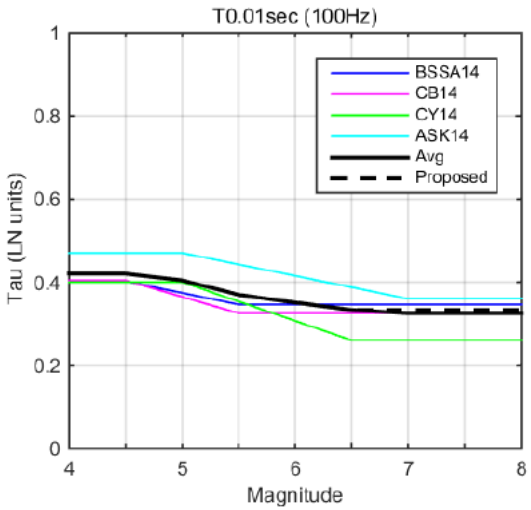


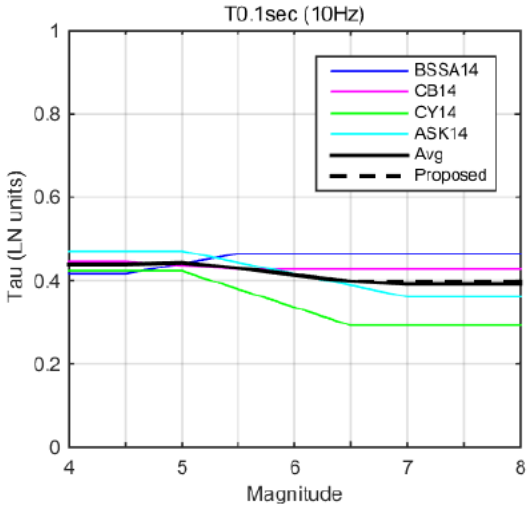
Note: finally this will be integrated into one node with 3 branches

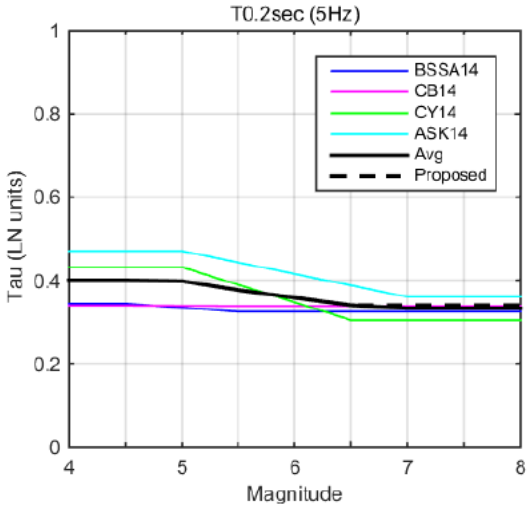
List of Tau Models with TDIs for Crustal Sources

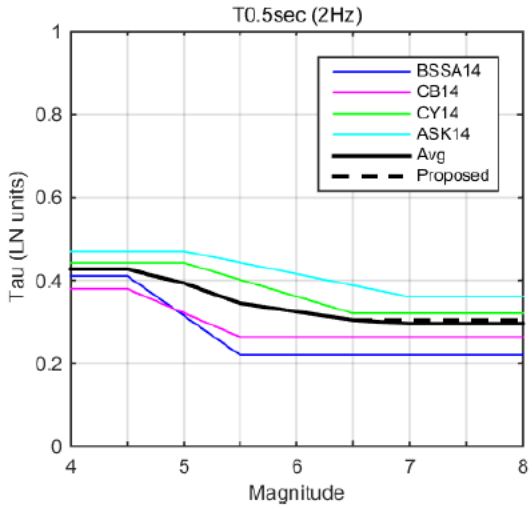
- **Foreign Tau models**
  - ASK14
  - BSSA14
  - CB14
  - CY14
  - Al-Atik (2015)
    - A model basically developed using the average of the four NGA-West2 Tau models (ASK14, BSSA14,CB14, and CY14).

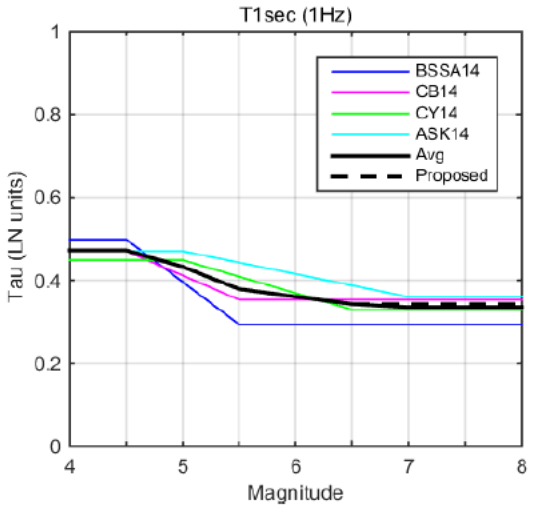
Al-Atik15 Tau Model - I

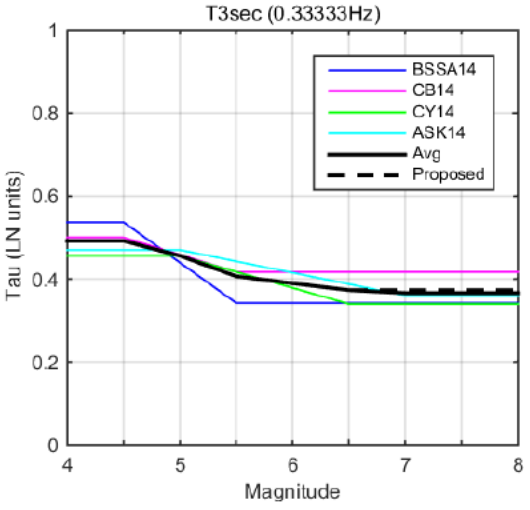




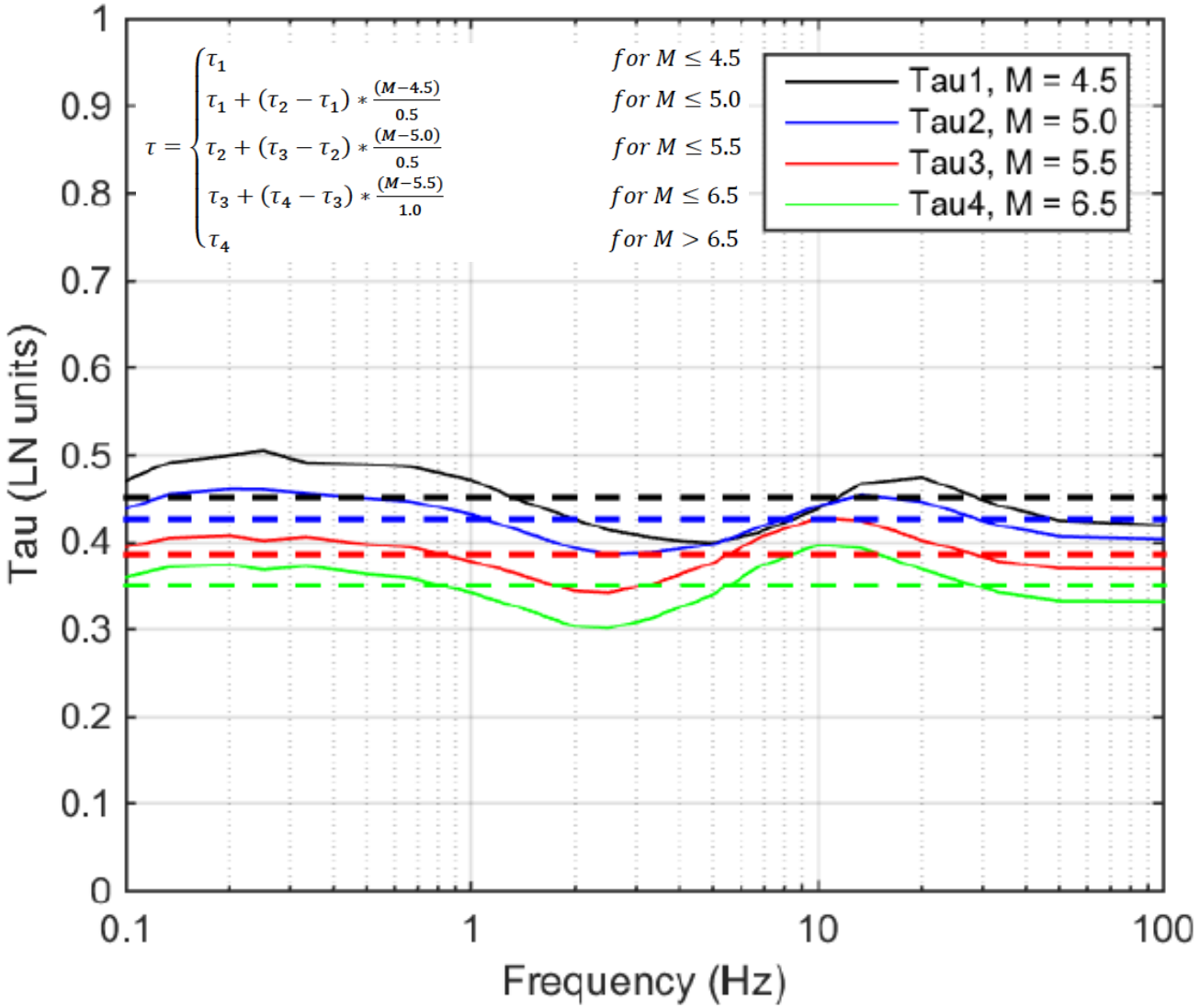




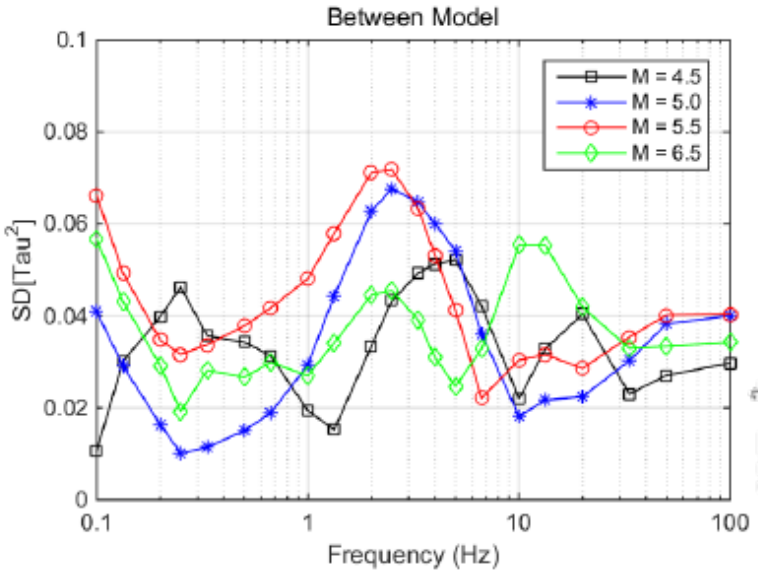


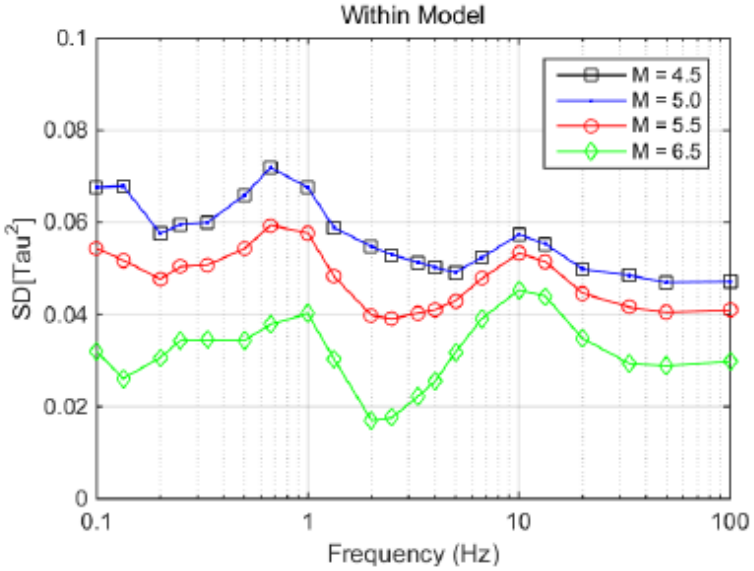


Al-Atik15 Tau Model - III



Al-Atik15 Tau Model - II





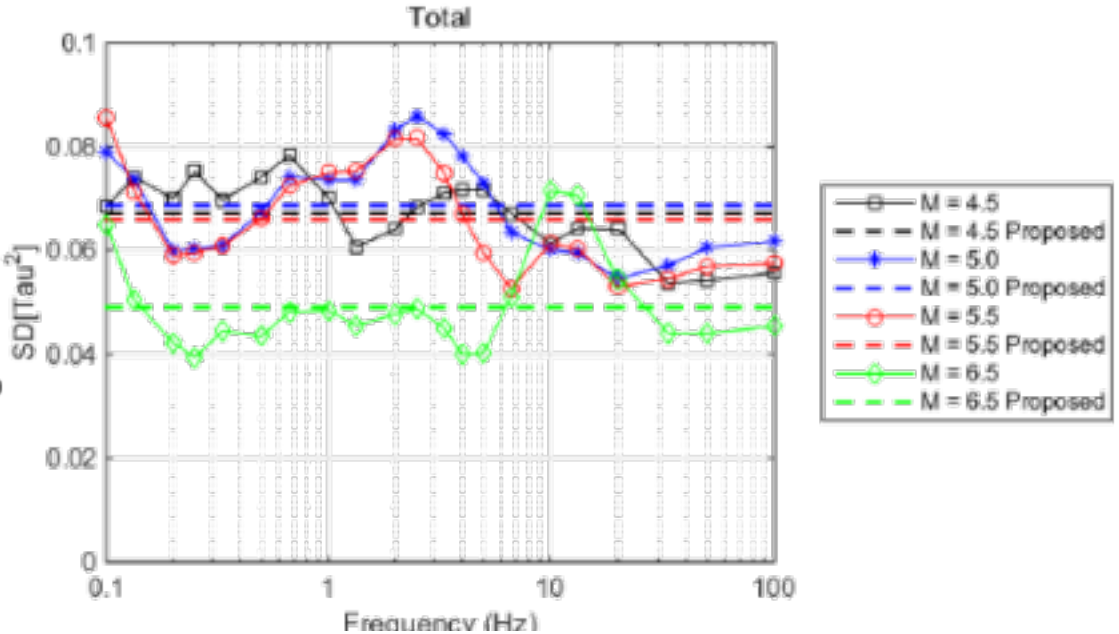
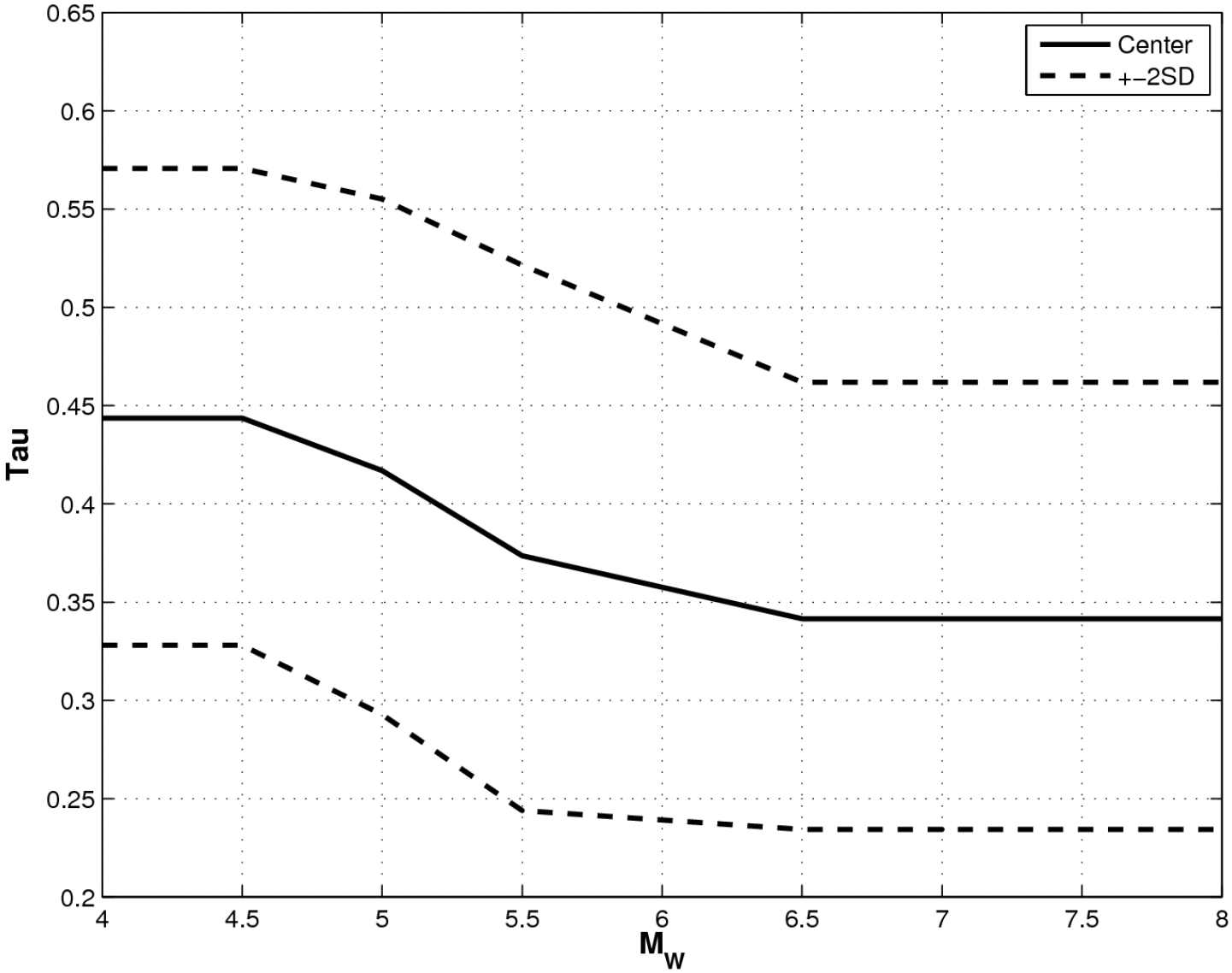


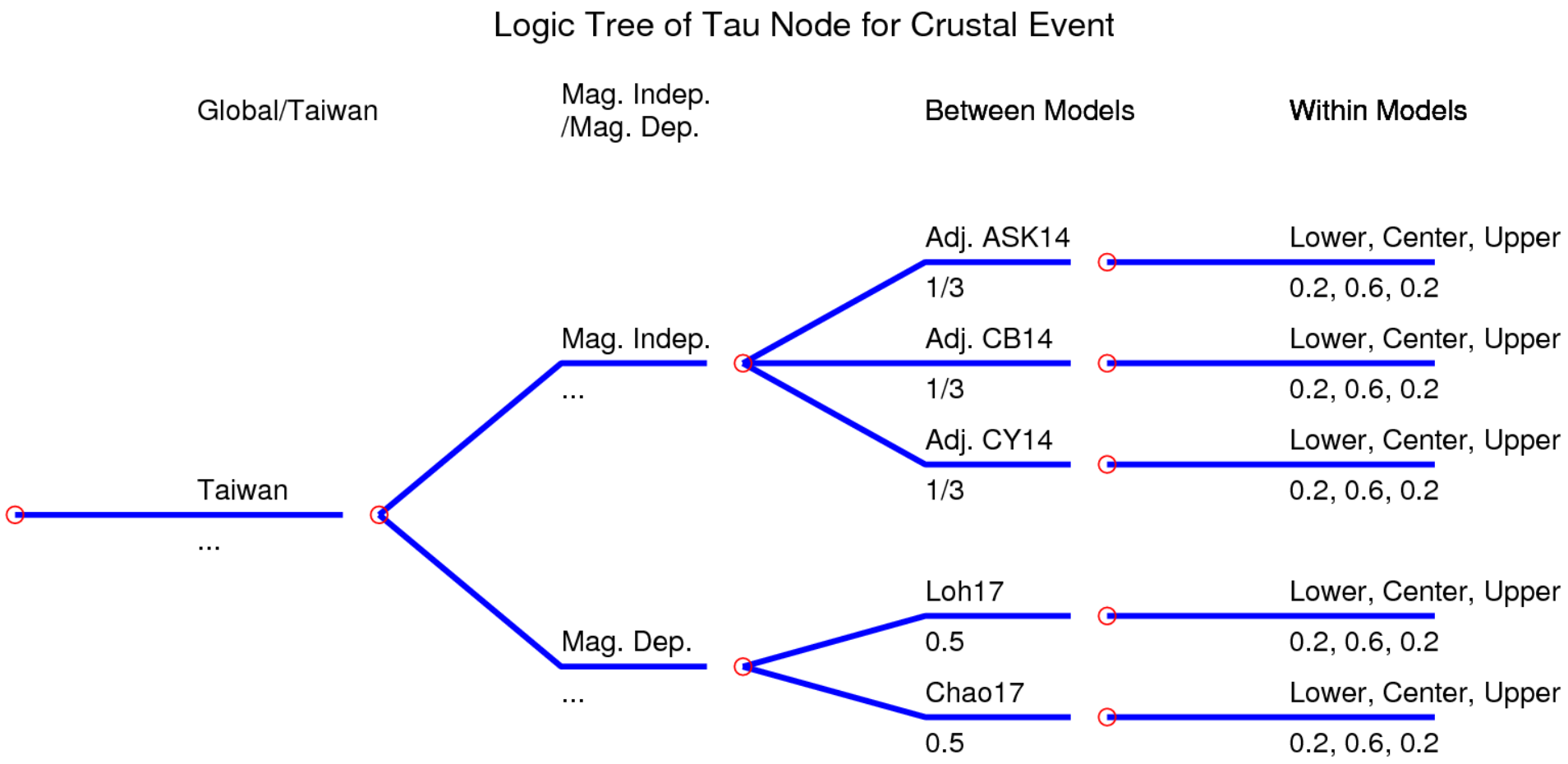
Table 5.1 Mean and standard deviation of the coefficients of the global τ model.

Period (sec)	Frequency (Hz)	Mean τ_1	$SD(\tau_1^2)$	Mean τ_2	$SD(\tau_2^2)$	Mean τ_3	$SD(\tau_3^2)$	Mean τ_4	$SD(\tau_4^2)$
0.01 to 10	0.1 to 100	0.4518	0.0671	0.4270	0.0688	0.3863	0.0661	0.3508	0.0491
PGV		0.3733	0.0558	0.3639	0.0554	0.3434	0.0477	0.3236	0.0449

Develop Logic Tree of Tau Models for Crustal Sources - Global Branch



Logic Tree of Tau Node for Crustal Event – Taiwan Branch

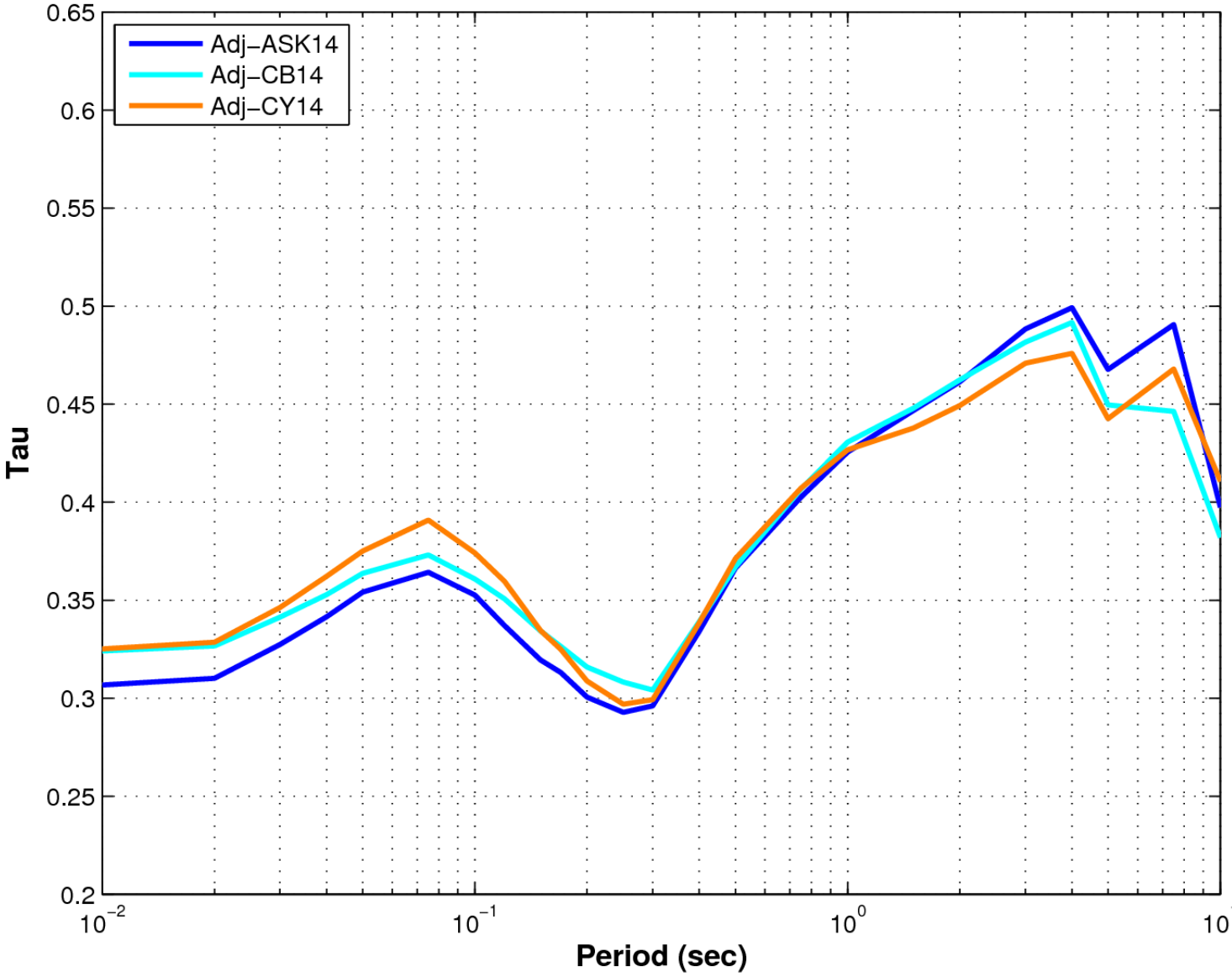


Note: finally this will be integrated into two nodes with 3 branches for each node

List of Tau Models with TDIs for Crustal Sources

- **Taiwan Tau models**
  - Magnitude -Independ
    - Adj-ASK14
    - Adj-CB14
    - Adj-CY14
  - Magnitude -depend
    - Loh17
    - Chao17

Comparison Magnitude-Independent Tau Models for Crustal Event – Taiwan Branch



Develop Logic Tree of Tau Models for Crustal Sources – Taiwan Branch

- **Approach 1**
  - If $\sigma_{W,i} \ll \sigma_B$

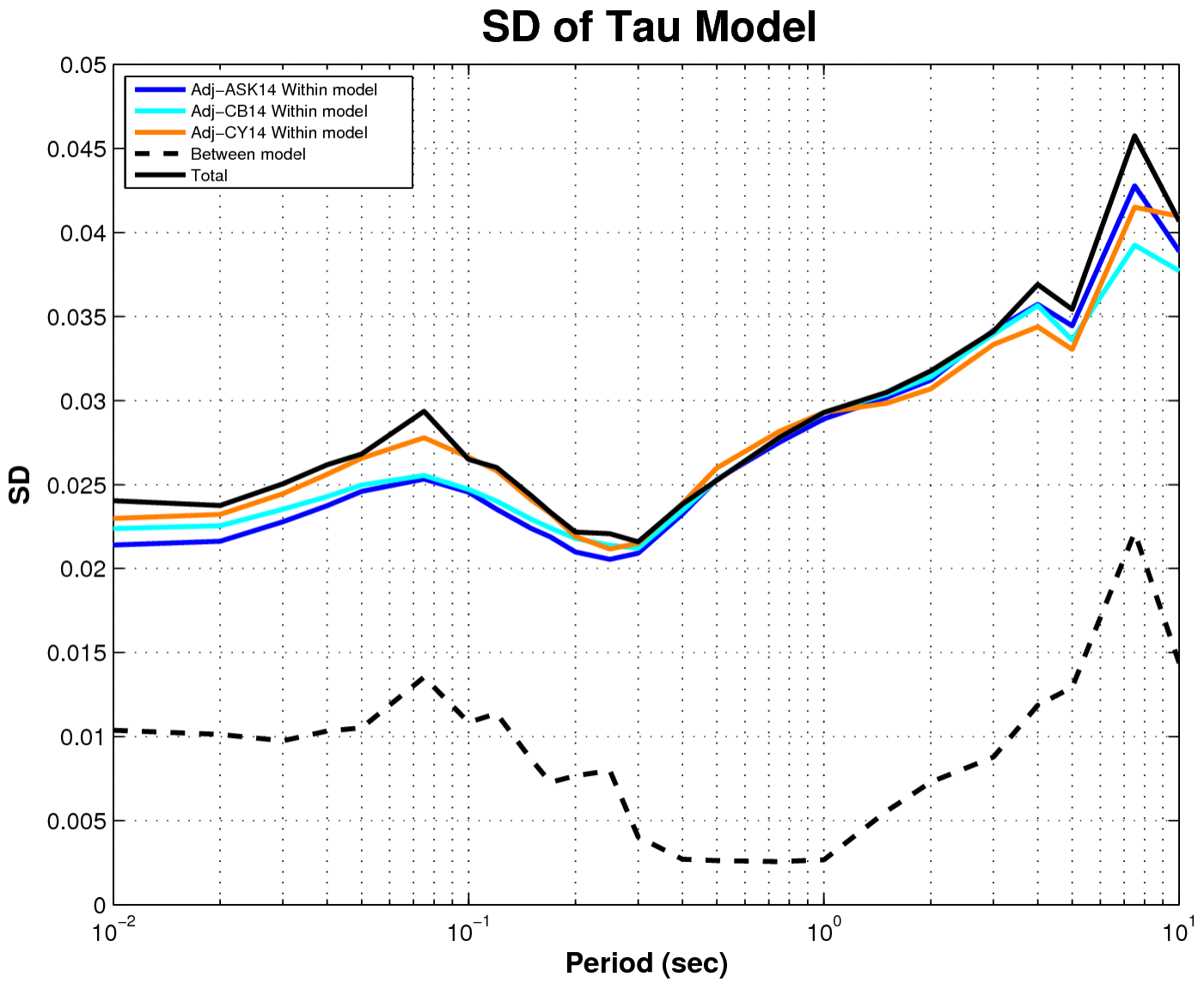
    $\Longrightarrow$ Only consider σ_B
- **Approach 2**
  - If $\sigma_{W,i} \sim \sigma_B$

    $\Longrightarrow$ Use Monte Carlo method to calculate σ_{Total}
- **Approach 3**
  - If each $\sigma_{Within,i}$ both close

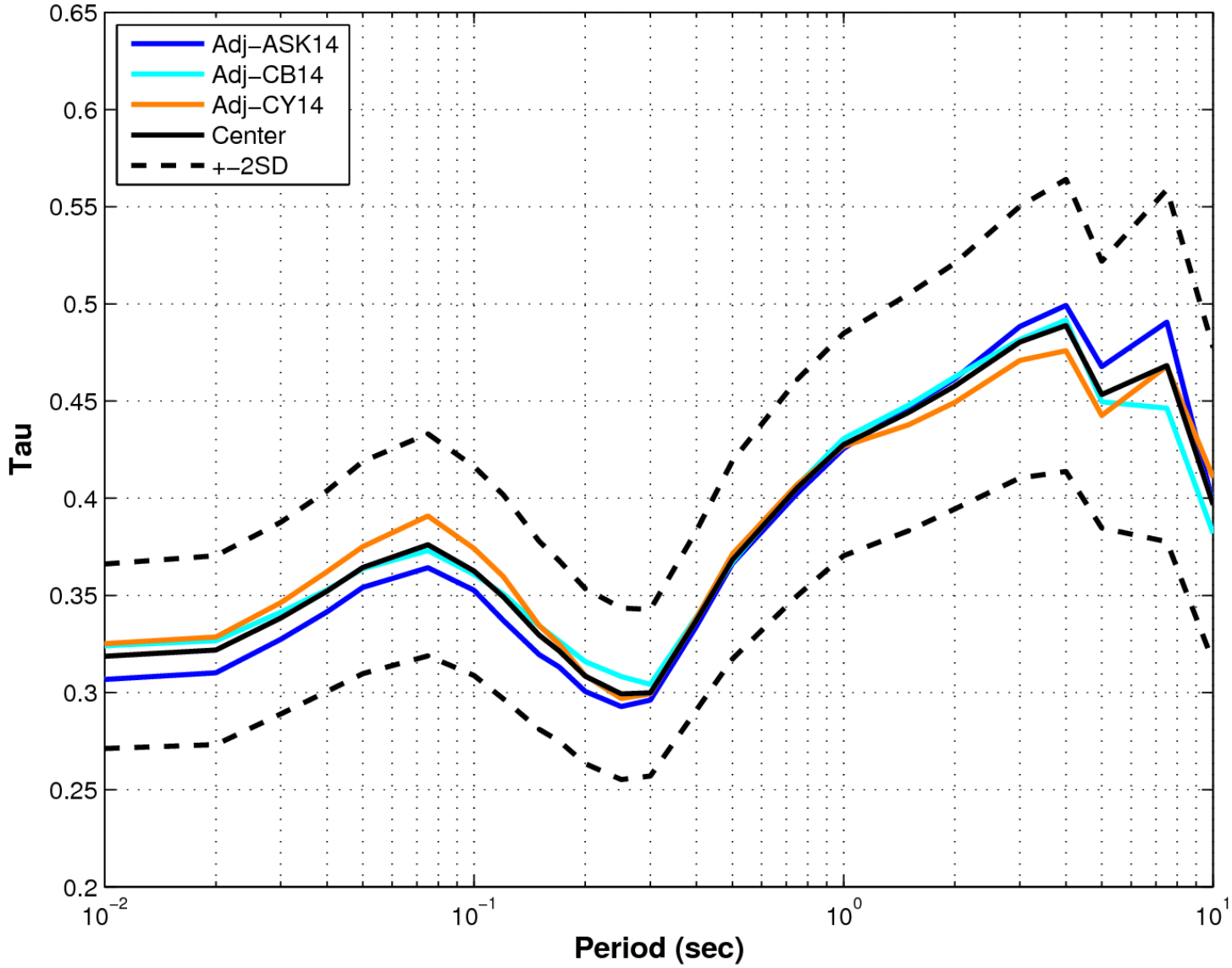
    $$\Longrightarrow \sigma_T = \sqrt{\overline{\sigma_{W,i}}^2 + \sigma_B^2}$$

$\sigma_T = Total\ of\ SD$
$\sigma_{W,i} = Within\ model$ of SD
$\sigma_B =$ Between model of SD

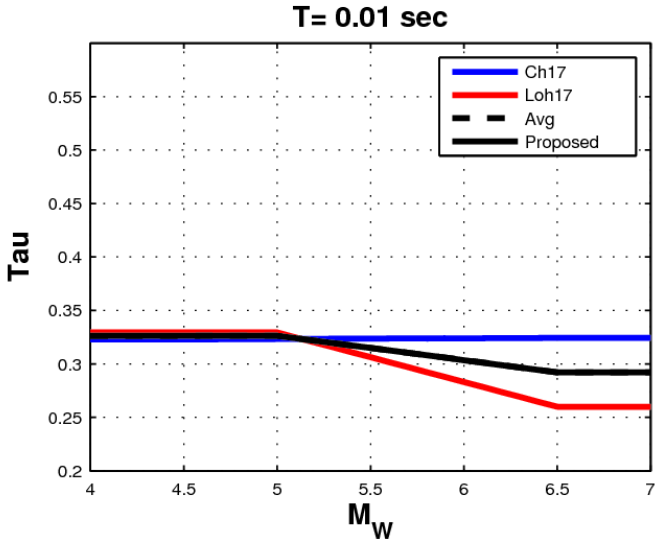
Develop the Magnitude-Independent Tau Models for Crustal Event – Taiwan Branch (Approach 2)

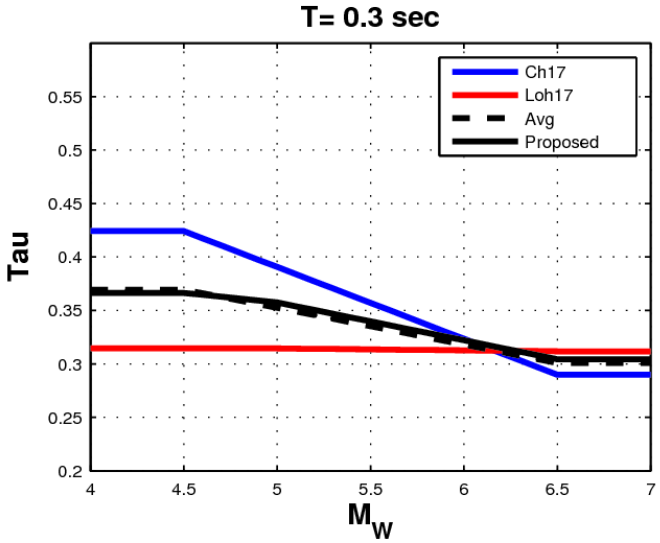


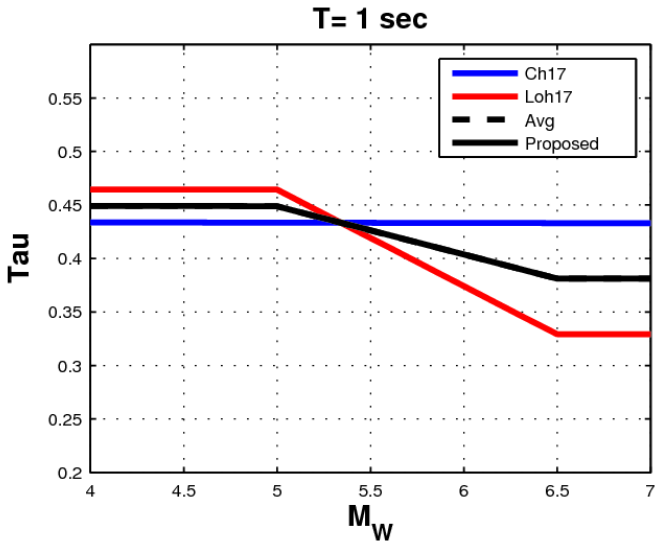
Develop the Magnitude-Independent Tau Models for Crustal Event – Taiwan Branch

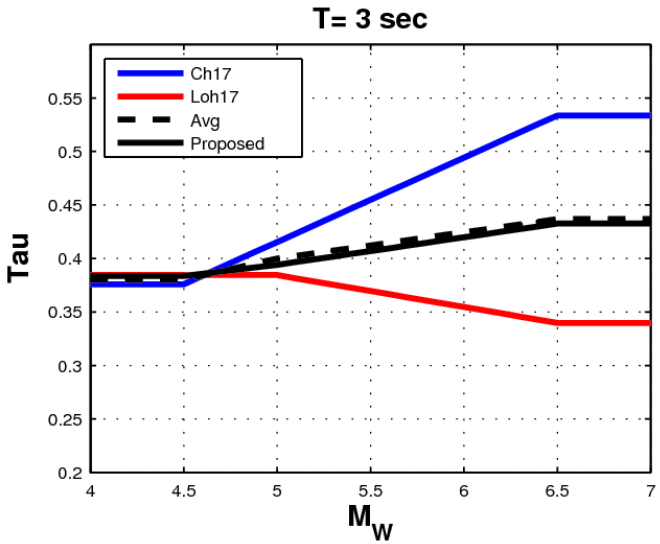


Comparison Magnitude-Dependent Tau Models for Crustal Event – Taiwan Branch

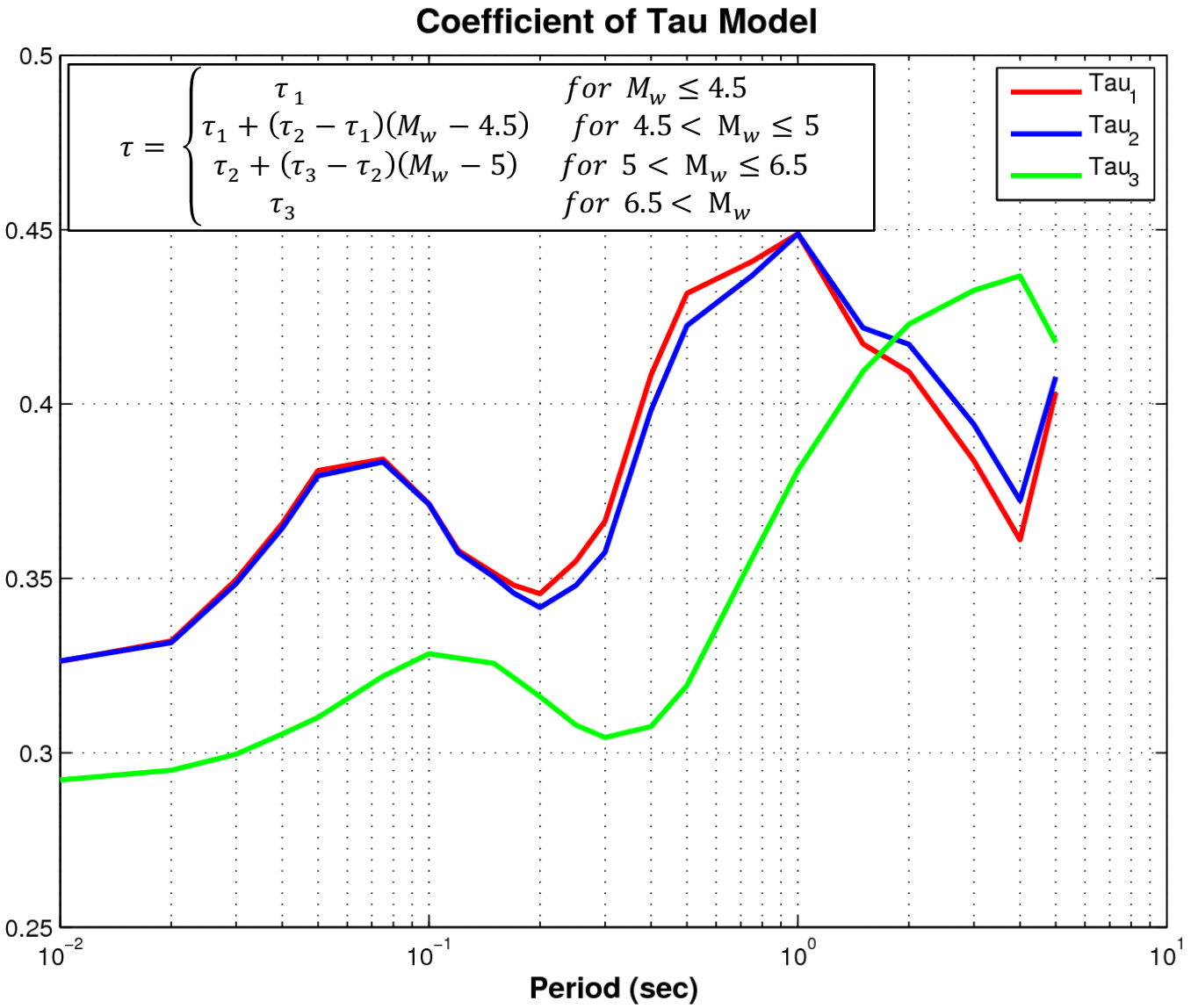








Develop the Magnitude-Dependent Tau Models for Crustal Event



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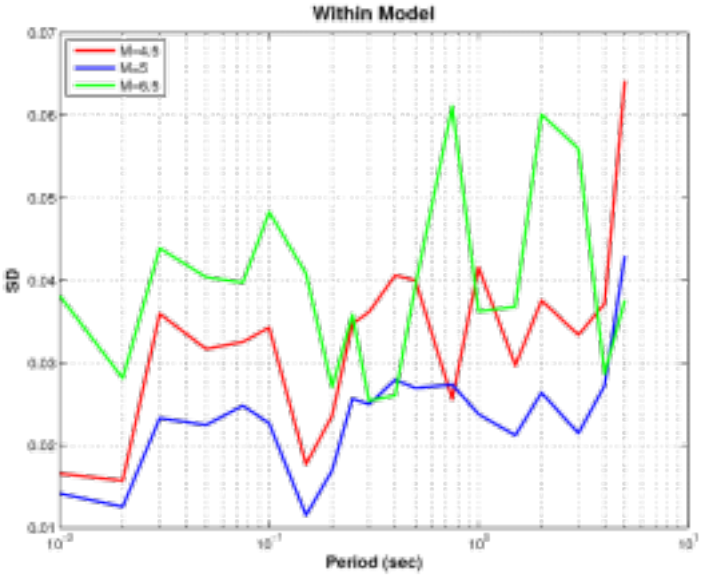
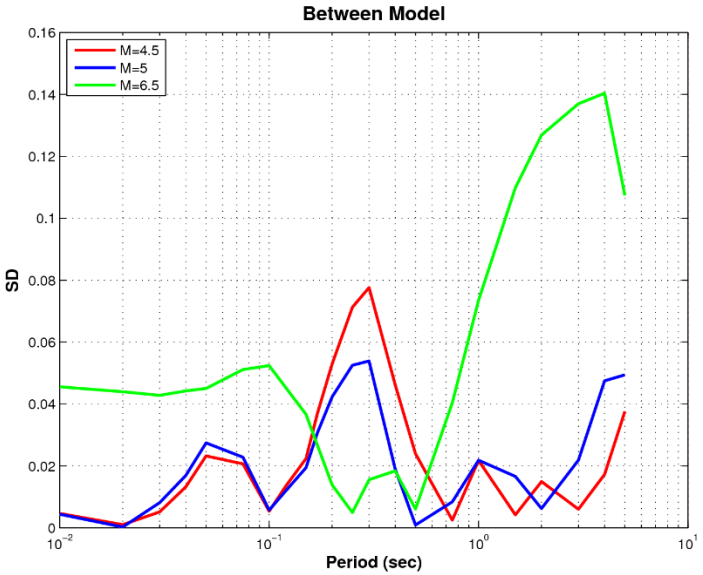
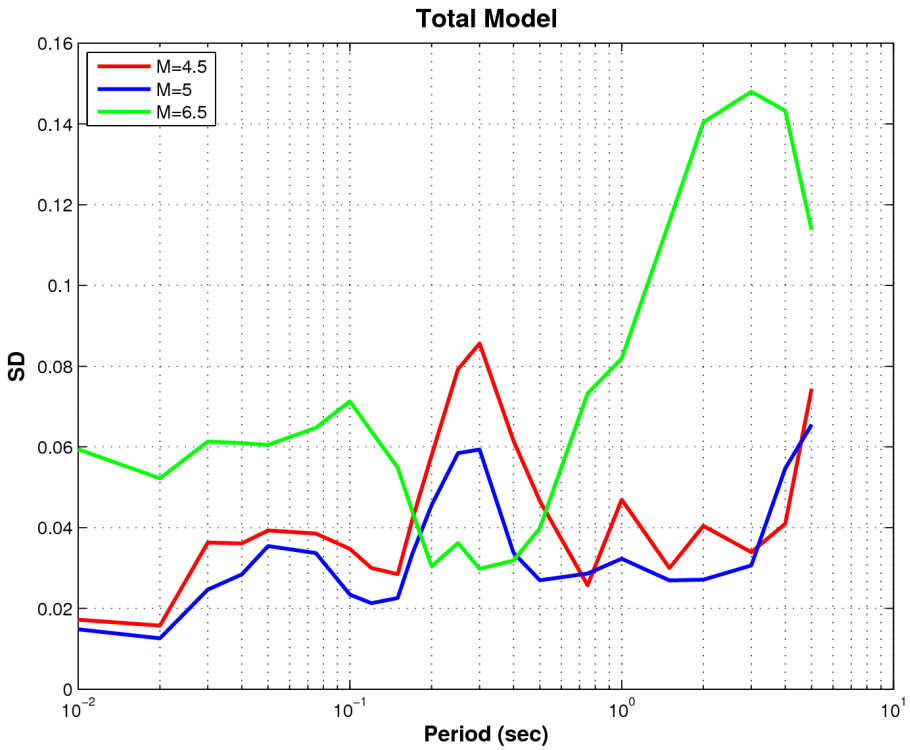
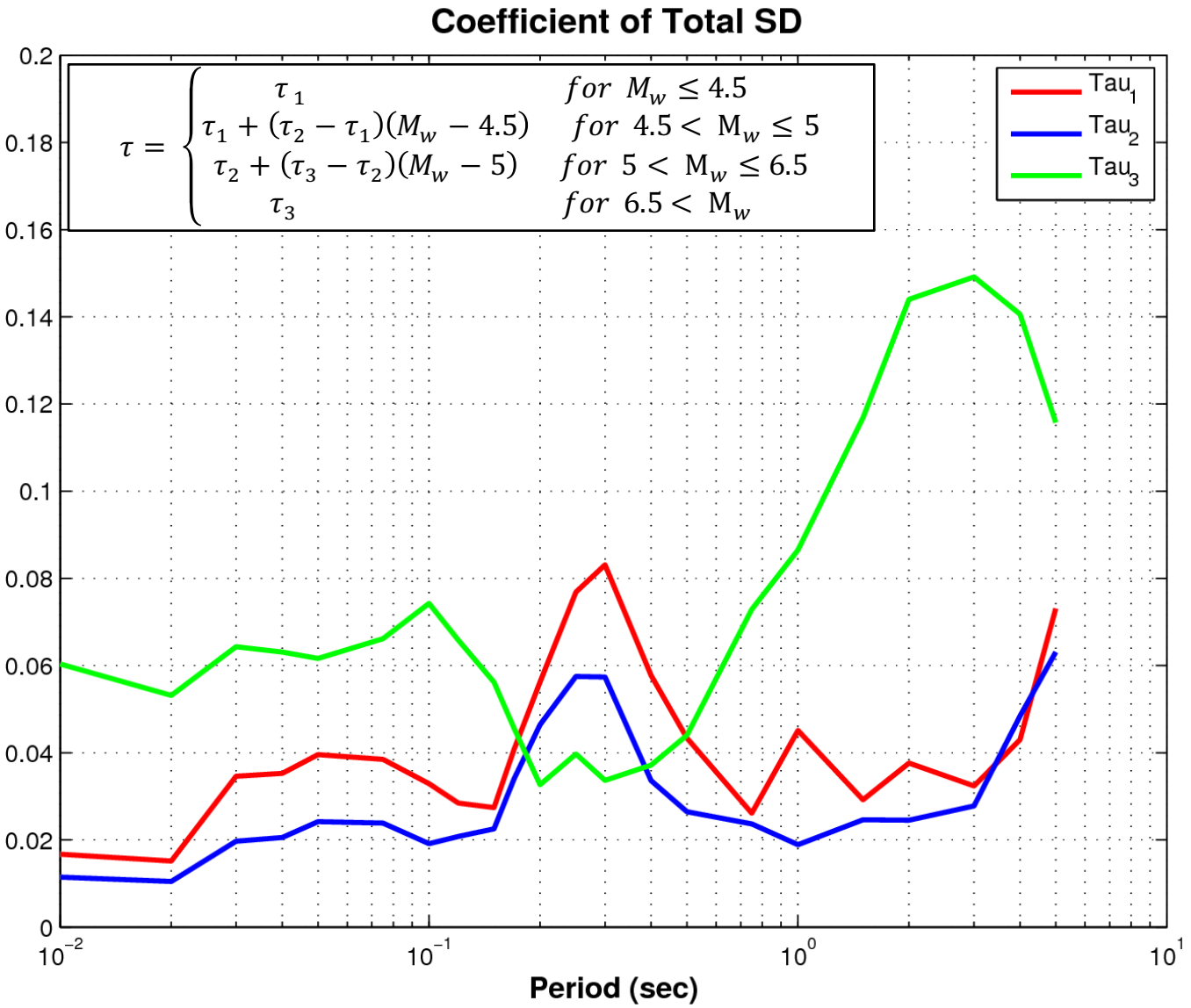


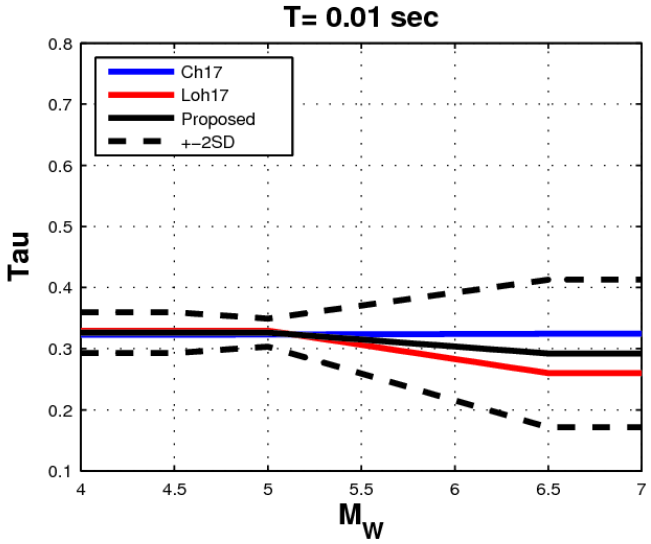


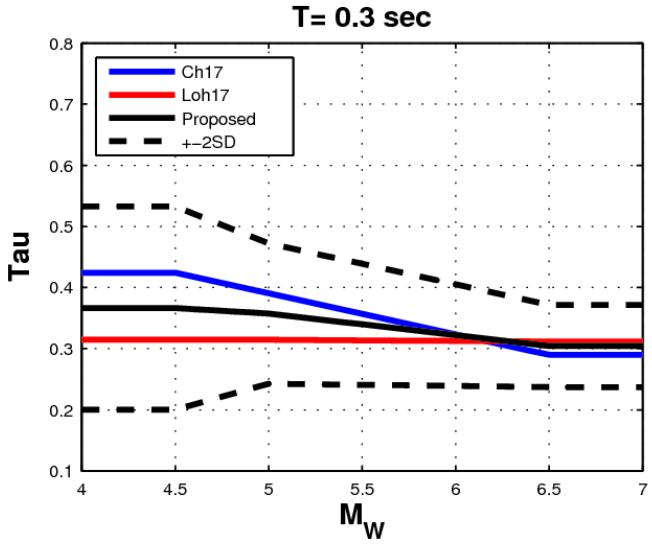


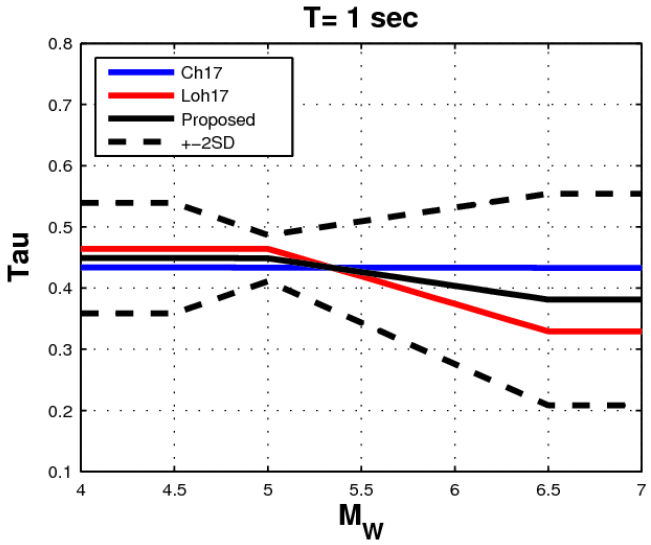
Develop the Magnitude-Dependent Tau Models for Crustal Event

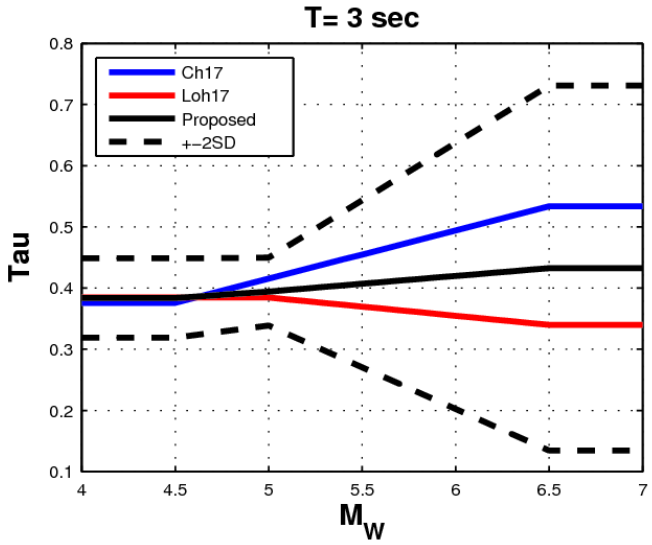


Develop the Magnitude-Dependent Tau Models for Crustal Event

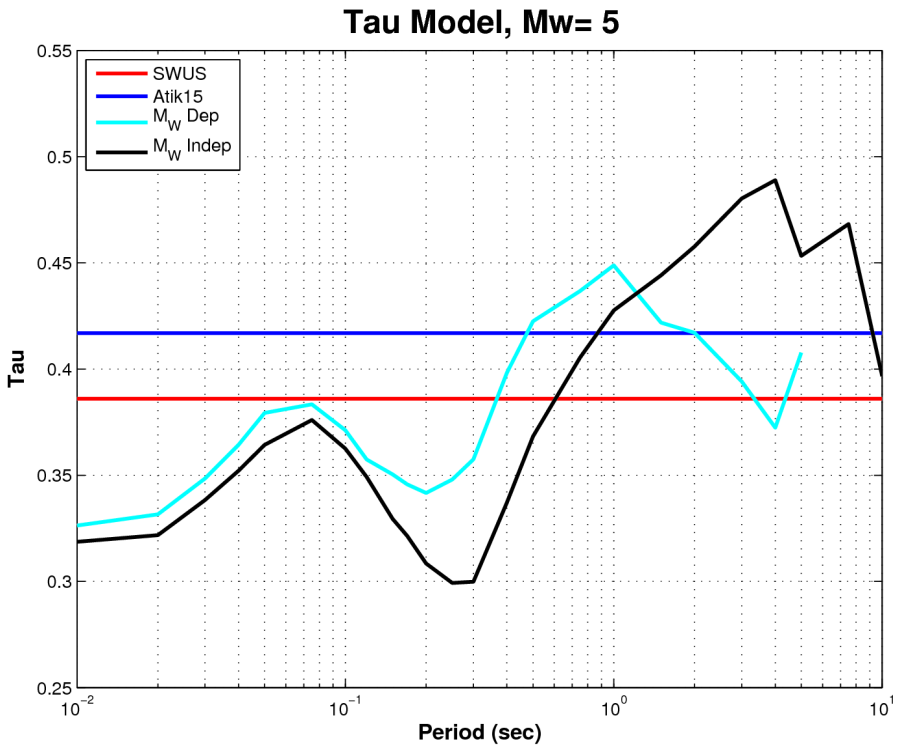


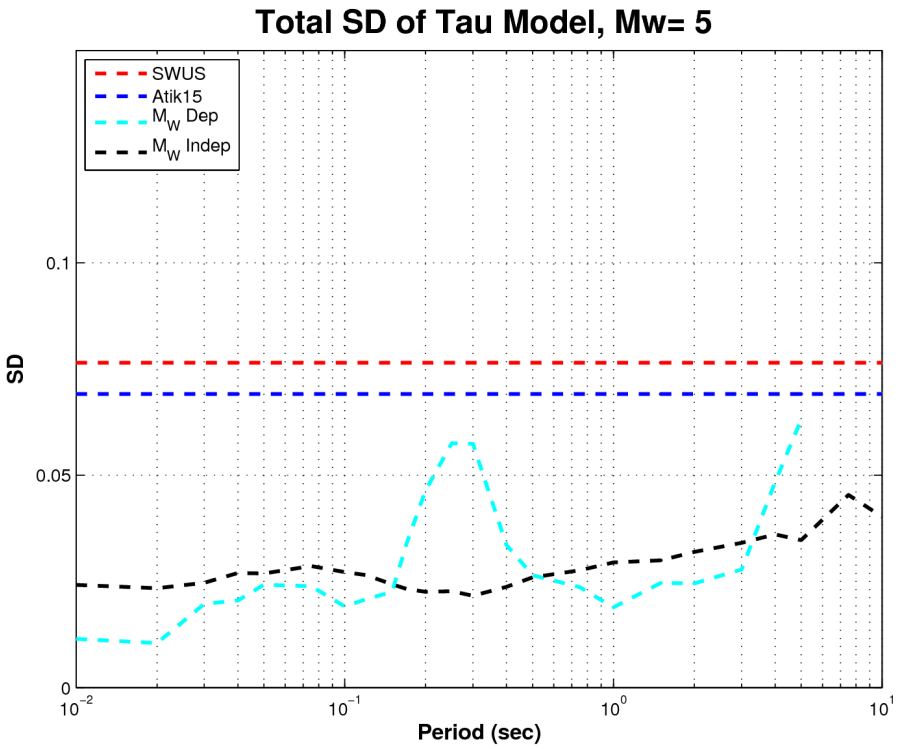




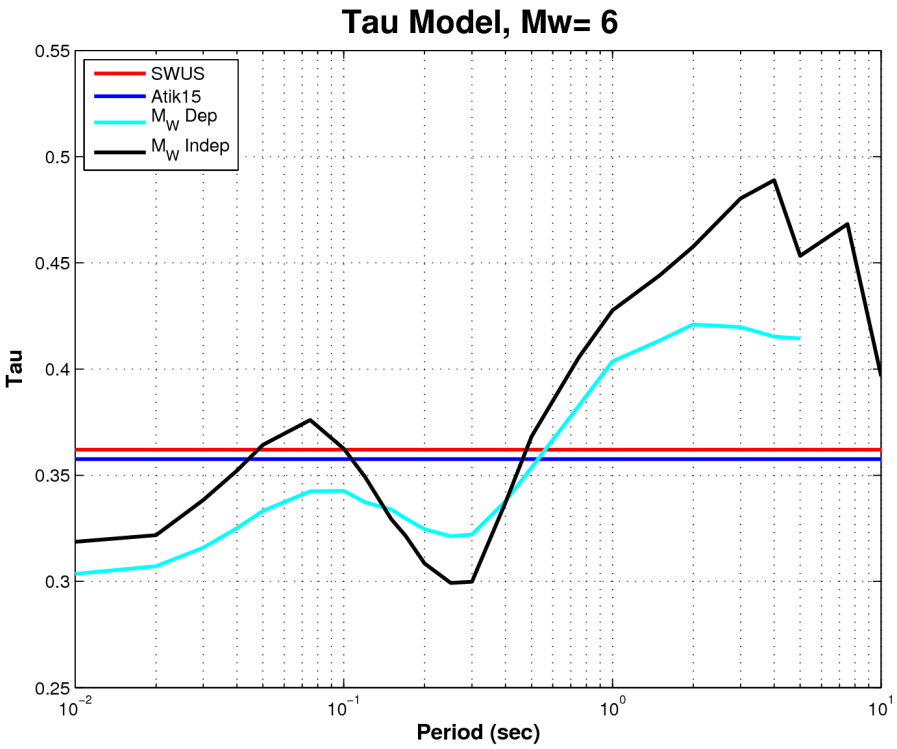


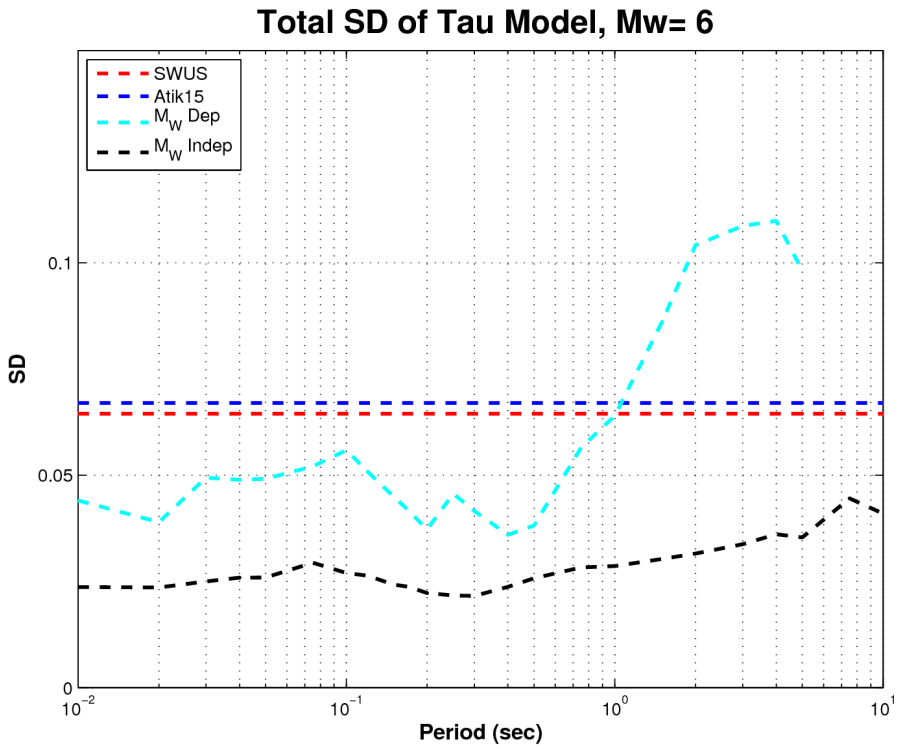
Comparison Tau Models for Mw=5



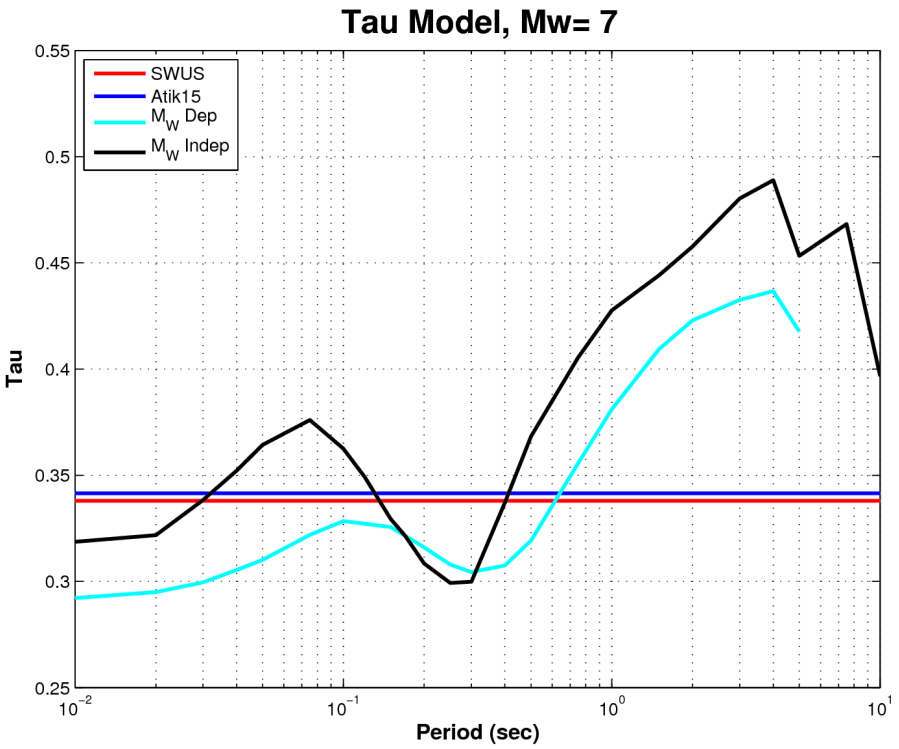


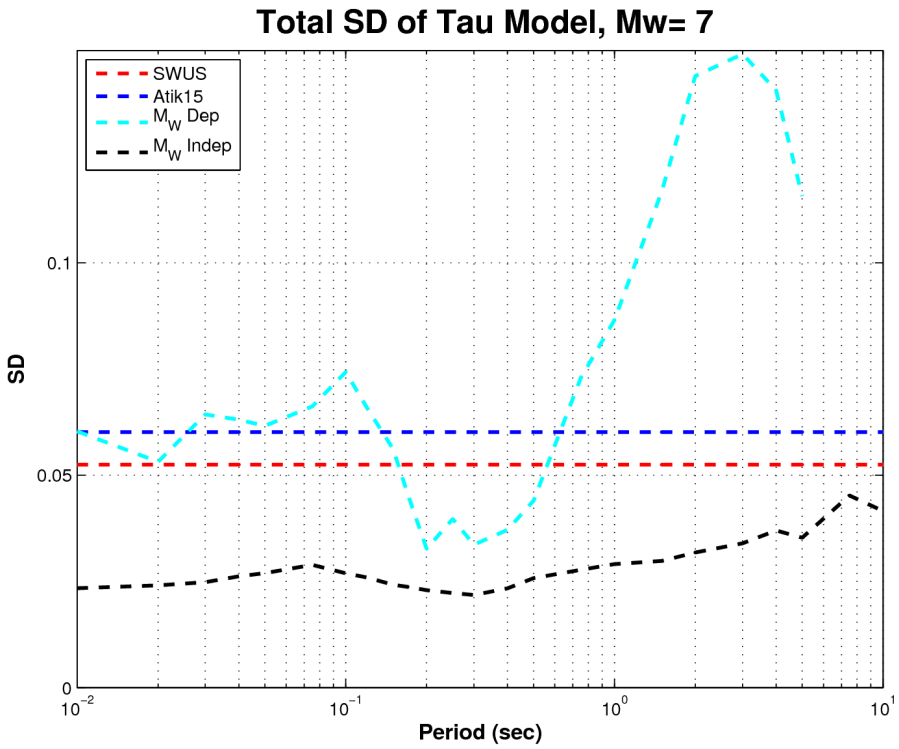
Comparison Tau Models for Mw=6



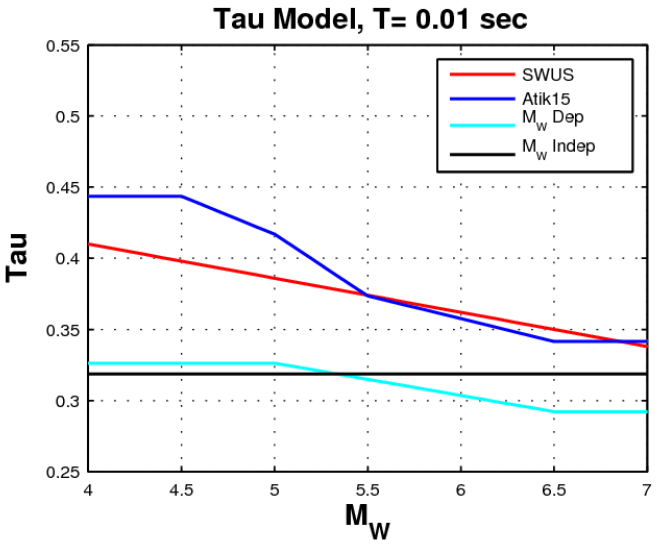


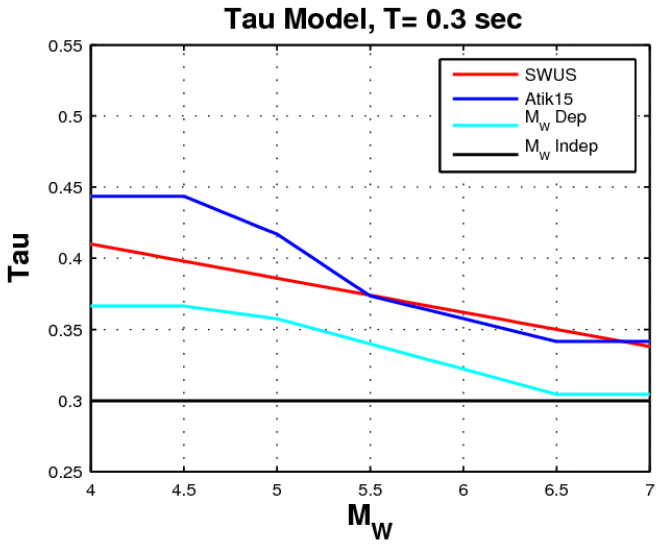
Comparison Tau Models for Mw=7

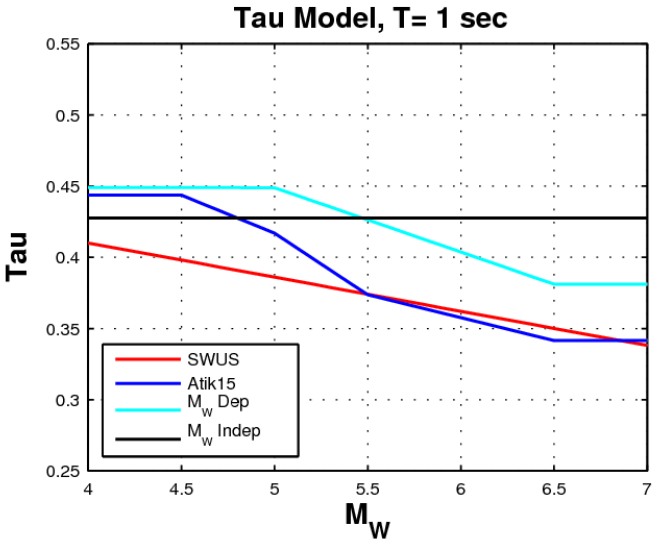


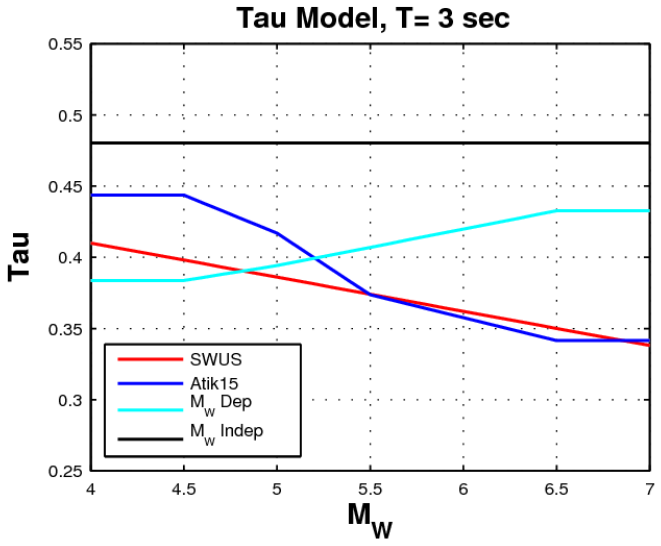


Comparison Tau Models

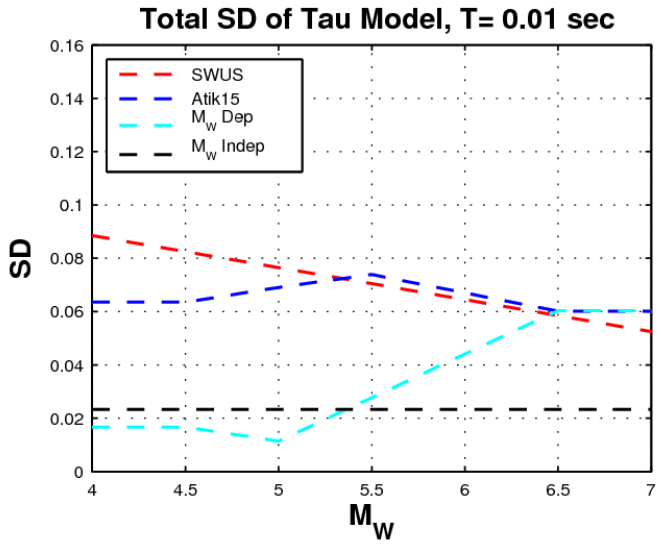


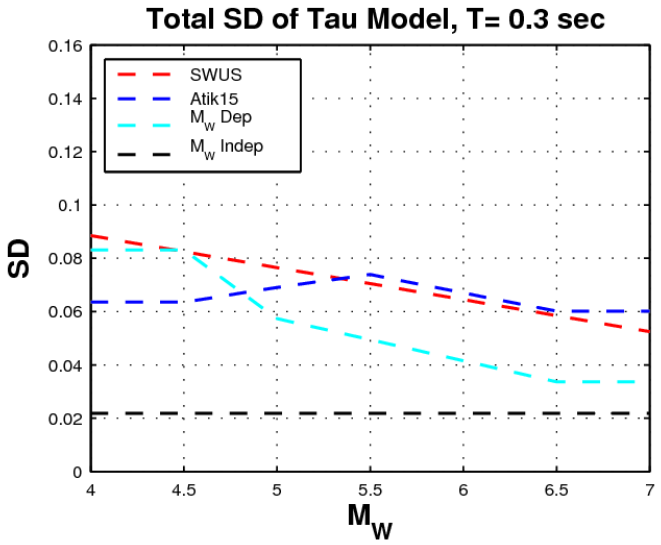


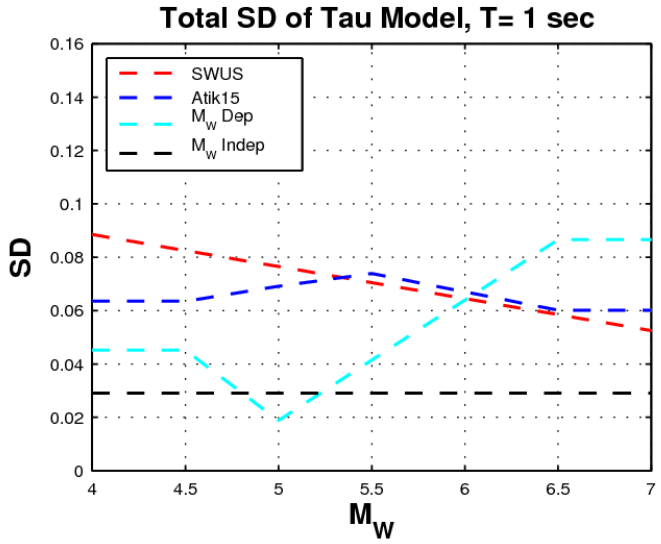


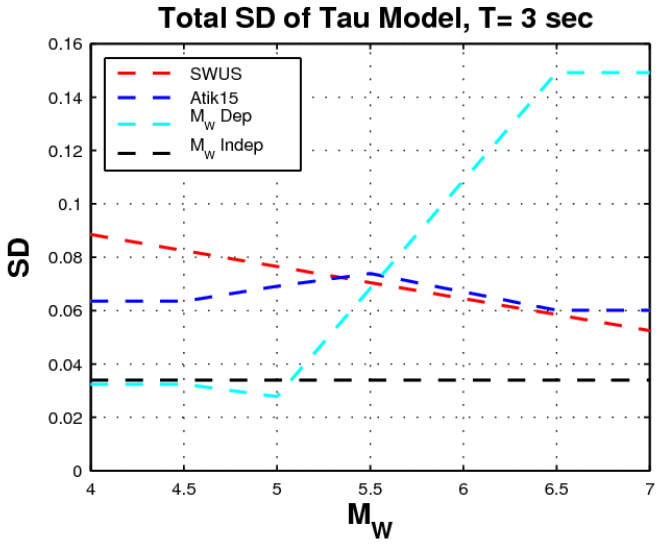


Comparison Total SD of Tau Models









Thank You for Your Attention !!

Questions ?