

*Supplementary file for*

**Revised earthquake sources along Manila Trench for tsunami hazard assessment  
in the South China Sea**

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**Table S1: Rupture scenarios and the associated initial surface displacements for tsunami simulations:**

<b>Rupture zones</b>	<b>Coupling model A</b>	<b>Coupling model B</b>
Zone 1	CM A zone 1 (Figure 3.a). Initial surface displacements: Vertical_dis_z1_A.txt	CM B zone 1 (Figure 3.d). Initial surface displacements: Vertical_dis_z1_B.txt
Zone 2	CM A zone 2 (Figure 3.b). Initial surface displacements: Vertical_dis_z2_A.txt	CM B zone 2 (Figure 3.e). Initial surface displacements: Vertical_dis_z2_B.txt

Zone 3	Rupture scenarios	Rupture scenarios	Rupture scenarios	Rupture scenarios	Rupture scenarios
<b>Coupling model A</b>	CM A zone 3-Gaussian slip distribution with 50% coupling ratio (Figure 3c).  Initial surface displacements: Vertical_dis_z3_A_0.5Gaussian.txt	CM A zone 3-Gaussian slip distribution with 80% coupling ratio (Figure 8a).  Initial surface displacements: Vertical_dis_z3_A_0.8Gaussian.txt	Shallow slip: CM-A Zone 3 with 50% coupling ratio (Figure 5a and Figure 8c).  Initial surface displacements: Vertical_dis_z3_A_0.5TEQ.txt	Shallow slip: CM-A Zone 3 with 80% coupling ratio (Figure 6c).  Initial surface displacements: Vertical_dis_z3_A_0.8TEQ.txt	Mega+splay fault CM-A Zone 3 with 50% coupling ratio (Figure 5c and Figure 8e).  Initial surface displacements: Vertical_dis_z3_megasplay_cp_0.5A.txt
<b>Coupling model B</b>	CM B zone 3-Gaussian slip distribution with 50% coupling ratio (Figure 3f). Initial surface displacements: Vertical_dis_z3_B_0.5Gaussian.txt	CM B zone 3-Gaussian slip distribution with 80% coupling ratio (Figure 8b).  Initial surface displacements: Vertical_dis_z3_B_0.8Gaussian.txt	Shallow slip: CM-B Zone 3 with 50% coupling ratio (Figure 5b and Figure 8d).  Initial surface displacements: Vertical_dis_z3_B_0.5TEQ.txt	Shallow slip: CM-B Zone 3 with 80% coupling ratio (Figure 6d). Initial surface displacements: Vertical_dis_z3_A_0.8TEQ.txt	Mega+splay fault CM-B Zone 3 with 50% coupling ratio (Figure 5d and Figure 8f).  Initial surface displacements: Vertical_dis_z3_megasplay_cp_0.5B.txt

Zone 3	Rupture scenarios
<b>Coupling model A</b>	Mega+splay fault CM-A Zone 3 with 80% coupling ratio (Figure 6a).  Initial surface displacements: Vertical_dis_z3_megasplay_cp_0.8A.txt
<b>Coupling model B</b>	Mega+splay fault CM-B Zone 3 with 80% coupling ratio (Figure 6b).  Initial surface displacements: Vertical_dis_z3_megasplay_cp_0.8B.txt