Input Parameters 60 272 588 913 1273 τ , s 94.57°E 93.90°E 93.21°E 92.60°E 92.87°E x_{α} 3.83°N 5.22°N 7.41°N 9.70°N 11.70°N y_o d, km 25 25 25 25 25 323° 348° 338° 10° 356° φ 90° 900 90° 900 90°

Table 1. TOPICS Input Parameters and Outputs for Five Tsunami Source Segments in Figure 1^a

S3

12°

12

390

 $\begin{array}{c} 120 \\ 4\times10^{10} \end{array}$

S4

12°

12

150

95

 $4\,\times\,10^{10}$

S5

12°

12

350

95

 $4\,\times\,10^{10}$

S2

12°

23

150

130

 $4\,\times\,10^{10}$

L from it. The total seismic moment of all five segments is $M_o = 7.55 \times 10^{22}$ or $M_w = 9.25$.

Parameters

 Δ , m

L, km

W, km

 μ , Pa

S1

12°

18

220

130

 $4\,\times\,10^{10}$

Output Parameters $M_{o}(J)$ 1.85×10^{22} 1.58×10^{22} 2.05×10^{22} 0.61×10^{22} 1.46×10^{22} 130 130 95 λ_o , km 120 95 τ_{o} , min 24.77 17.46 23.30 18.72 18.72 -3.27: +7.02-3.84: +8.59-2.33; +4.72-2.08: +4.49-2.31; +4.60 η_o , m ^aGiven are: time delay of segment rupture from earthquake time τ (a 60-s rising time is added); longitude and latitude of segment centroid (x_o, y_o) ; the centroid depth d, the fault strike angle φ (clockwise from north); the fault rake angle λ (counterclockwise from strike); the fault dip angle δ with the horizontal plane; the maximum fault slip Δ ; the segment length along and width across (L, W); and the medium shear modulous μ ; the seismic moment M_o ; the characteristic initial tsunami wavelength λ_o and period τ_o ; and the characteristic tsunami trough and peak

amplitudes η_0 . Note that in the simulation, slip is maximum at the segments' centroid and drops by 50% at a radius of