Field Survey of the 2018 Anak Krakatau Tsunami on the Islands in the Sunda Strait

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Volcanic Tsunamis: Krakatau 1883 and 2018

Krakatau 1883 remnant Rakata

Anak Krakatau Before (Photo: September 2018)

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Anak Krakatau Before
(Photos: September 2018)
Meeting at Marine Research Center (MRC):
Ministry of Marine Affairs and Fisheries (MoMAF) and
Coordinating Ministry of Maritime Affairs (CMoMA)
TIDE STATION POINTS

Slide:
Widjo Kongko

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Slide:
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MARIGRAM: Ciwandan

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Sunda Strait Islands Tsunami Field Survey

[Map of Sunda Strait Islands with locations marked]

[Graph showing tsunami height and runup height]
Rakata Island
Maximum 85 m runup

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Rakata Island
Rakata Island
Rakata Island

Fritz et al., 2020
Rakata Island

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Rakata Island

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Rakata Island

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Rakata Island

Fritz et al., 2020
Rakata Island

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Krakatau Volcanic Complex

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Panjang Island

Fritz et al., 2020
Panjang Island

Fritz et al., 2020
Panjang Island

Fritz et al., 2020
Anak Krakatau Volcano

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Anak Krakatau Volcano

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Sertung Island

Fritz et al., 2020
Sertung Island

Fritz et al., 2020
Sertung Island

Fritz et al., 2020
Sertung Island

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Sebesi

Nearest Inhabited Island

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Sebesi Island
Sebesi Island

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Sebesi Island

Fritz et al., 2020
Sebesi Island

Fritz et al., 2020
Waymuli, Sumatra

Fritz et al., 2020
Waymuli, Sumatra

Fritz et al., 2020
Panaitan Island, Ujung Kulon National Park
Panaitan Island, Ujung Kulon National Park
Panaitan Island, Ujung Kulon National Park

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Ujung Kulon National Park

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Ujung Kulon National Park

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Ujung Kulon National Park

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Ujung Kulon National Park

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Eyewitness Interview

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Sunda Strait Islands Tsunami Field Survey

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2018 Sunda Strait tsunami CONCLUSIONS

- ITST collected 87 tsunami heights February 4-9, 2019
- Maximum 85 m runup on Rakata and an 83 m runup on Sertung.
- Flow depth reached more than 11 m above ground on Sertung.
- On Sebesi Island located 15 km northeast of the source tsunami runup heights remained below 10 m.
- Tsunami heights exceeding 10 m were observed in the Ujung Kulon National Park located 50 km southwest.
- The runup distributions on the islands encircling Anak Krakatau highlight the directivity of the collapse towards the southwest.
- Inundation and damage were mostly limited to within 400 m of the shoreline given the relatively short wavelengths of volcanic tsunamis.
- The team interviewed numerous eyewitnesses based on established protocol and educated residents about tsunami hazards.
- Community-based education and awareness programs are essential to save lives in locales at risk from locally generated tsunamis.
- Regrowth of Anak Krakatau will determine the future tsunami hazard.
- PAGEOPH Borrero et al., 2020 tentatively accepted for publication
Acknowledgments

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Terima Kasih - Questions

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