



FALL MEETING

Washington, D.C. | 10-14 Dec 2018

NH23F: The 2018 Mw 7.5 Sulawesi Indonesia earthquake: tsunamigenic potential of strike slip faults II Poster

On September 28, 2018 at 6:03 pm local time (10:03 am UTC) a magnitude 7.5 earthquake ruptured ~80 km north of Palu along the Minahasa peninsula of Sulawesi, Indonesia. The subsequent tsunami struck nearby coasts, resulting in severe damage to infrastructure and a death toll of more than one thousand victims. This event clearly shows that strike-slip earthquakes of this magnitude have the potential to cause damaging tsunamis, at least locally, as result of coseismic displacement, tsunamigenic landslides, and/or local amplifying conditions. Whatever the mechanism, this tsunami has been an important wake up call and emphasizes the need to better understand the tsunami hazard to all coastlines and not only those along major subduction zones. This event serves as a reminder of the importance of continuously updating tsunami forecasting tools, infrastructure, and standard operation procedures, as well as the need for improved community awareness and preparedness. We invite abstracts dealing with analysis and observations of this earthquake and tsunami, including its source and impact, past events in the region, and related earthquake and tsunami risk reduction measures.

Tuesday, 11 December 2018

13:40 - 18:00

📍 *Walter E Washington Convention Center - Hall A-C (Poster Hall)*

Primary Convener

Stefano Lorito

National Institute of Geophysics and Volcanology

Conveners

Jessica Pilarczyk

University of Southern Mississippi

Kelly J Stroker

National Centers for Environmental Information

Finn Løvholt

Norwegian Geotechnical Institute

Chairs

Stefano Lorito

National Institute of Geophysics and Volcanology

Finn Løvholt

Norwegian Geotechnical Institute

OSPA Liaison

Stefano Lorito

National Institute of Geophysics and Volcanology

Papers

NH23F-3541 Rapid Survey on the Aftermath of Palu-Indonesia Tsunami 28 Sept. 2018 and the Plausible Genesis of Tsunami

Widjo Kongko

Widjo Kongko, Indonesian Agency for the Assessment and Application of Technology (BPPT), Port Infrastructures & Coastal Dynamics Laboratory (BTIPDP), Yogyakarta, Indonesia, Prihartanto Prihartanto, Indonesian Agency for the Assessment & Application of Technology (BPPT), Technology Center for Disaster Risk Reduction (PTRRB), Jakarta, Indonesia, Yudhicara Yudhicara, Geological Agency, Ministry of Energy and Mineral Resources (ESDM), Center for Volcano & Geological Disaster Mitigation (PVMBG), Bandung, Indonesia, Purna Putra, Indonesian Institute of Sciences (LIPI), Research Center for Geo-technology (Geotek), Bandung, Indonesia and Budi Santoso, Indonesian Agency for the Assessment & Application of Technology (BPPT), Port Infrastructures & Coastal Dynamics Laboratory (BTIPDP), Yogyakarta, Indonesia

NH23F-3542 TSUNAMI ON 28 SEPTEMBER 2018 IN PALU BAY ~ AN EYEWITNESSES ACCOUNT AT WANI, TANJUNG KARANG-DONGGALA AND TIDE GAUGE MEASUREMENT AT PANTOLOAN PORT, CENTRAL SULAWESI, INDONESIA

Gegar Sapta Prasetya

Gegar Sapta Prasetya, Tsunami Research Foundation Indonesia, Indonesian Tsunami Scientific Community, Jakarta Selatan, Indonesia, Widjo Kongko, BPPT-BPDP, Yogyakarta, Indonesia, Semeidi Husrin, The Marine Research Centre, Ministry of Marine Affairs and Fisheries (KKP) - Indonesia, Jakarta, Indonesia and Rahman Hidayat, Directorate of Infrastructures for Shipping, Fishery, and Tourism, Coordinating Ministry for Maritime Affairs - Republic of Indonesia, Jakarta Pusat, Indonesia

NH23F-3543 Field Survey on the Coastal Impacts of the September 28, 2018 Palu, Indonesia Tsunami

Ahmet C Yalciner

Ahmet C Yalciner¹, Rahman Hidayat², Semeidi Husrin³, Alessandro Annunziato⁴, Gozde Guney Dogan⁸, Andrey Zaytsev⁹, Rachid Omira¹⁰, Chiara Proietti¹¹, Pamela Probst¹², Maria Ausilia Paparo¹³, Martijn Wronna¹⁴, Pavel Pronin¹⁵, Adel Giniyatullin¹⁶, Purna Putra¹⁷, Dwi Hartanto¹⁸, Gian Ginanjar¹⁹, Widjo Kongko²⁰, Efim N Pelinovsky²¹ and UNESCO International Tsunami Survey Team (ITST November 05-11 2018), (1)Middle East Technical University, Ankara, Turkey, (2)Directorate of Infrastructures for Shipping, Fishery, and Tourism, Coordinating Ministry for Maritime Affairs - Republic of Indonesia, Jakarta Pusat, Indonesia, (3)The Marine Research Centre, Ministry of Marine Affairs and Fisheries (KKP) - Indonesia, Jakarta, Indonesia, (4)European Commission Joint Research Centre, Ispra Vey, Italy, (5)Middle East Technical University, Civil Engineering, Ankara, Turkey, (6)Special Research Bureau, Far Eastern Branch of Automation of Sciences, Yuzhno Sakhalinsk, Russia, (7)IPMA, Lisboa, Portugal, (8)University of Bologna, Bologna, Italy, (9)Instituto Dom Luíz, FCUL, Universidade de Lisboa and Instituto do Mar e da Atmosfera, Lisboa, Portugal, (10)Nizhny Novgorod State Technical University, n. a. R. E. Alekseev, Nizhny Novgorod, Russia, (11)Indonesian Institute of Sciences (LIPI), Research Center for Geo-technology (Geotek), Bandung, Indonesia, (12)Indonesian Agency for Meteorology, Climatology and Geophysics, Jakarta, Indonesia, (13)BPPT-BPDP, Yogyakarta, Indonesia, (14)Inst Applied Physics, Nizhny Novgorod, Russia

NH23F-3544 Preliminary Findings of st the GEER-HATTi Reconnaissance Investigation of the Palu Earthquake*Jack Montgomery*

ABSTRACT WITHDRAWN

NH23F-3545 The 28 September 2018 Mw 7.5 Sulawesi (Indonesia) earthquake and its implication for tsunami early warning*Y Tony Song*

Y Tony Song¹, *Kejie Chen*¹, *Zhen Liu*¹, *Kevin Roback*² and *Jean-Philippe Avouac*³, (1)Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Caltech, Pasadena, United States, (3)California Institute of Technology, Division of Geological and Planetary Sciences, Pasadena, CA, United States

NH23F-3546 Physics-based Coupled Models of the 2018 Sulawesi Earthquake and Tsunami*Elizabeth H Madden*

Elizabeth H Madden¹, *Thomas Ulrich*¹, *Leonhard Rannabauer*², *Stefan Vater*³, *Alice-Agnes Gabriel*, *Joern Behrens*, *Duo Li*, *Taufiqurrahman Taufiqurrahman*, *Ylona van Dinther*, *Michael Bader*, *Carsten Uphoff*, *Stephanie Wollherr* and *Iris van Zelst*, (1)Ludwig Maximilians University of Munich, Department of Earth and Environmental Sciences, Munich, Germany, (2)Technical University of Munich (TUM), Munich, Germany, (3)University of Hamburg, Hamburg, Germany, (4)ETH Swiss Federal Institute of Technology Zurich, Department of Earth Sciences, Zurich, Switzerland

NH23F-3547 Tsunami Generation From Coseismic Deformation During the 2018 M_w 7.5 Palu Earthquake*Amy Williamson*

Amy Williamson, University of Oregon, Eugene, OR, United States, *Dr. Diego Melgar*, University of Oregon, Department of Earth Sciences, Eugene, OR, United States, *Xiaohua Xu*, Scripps Institution of Oceanography, La Jolla, CA, United States and *Christopher William Douglas Milliner*, University of Southern California, Venice, CA, United States

NH23F-3548 A first look of poor study area in the Sulawesi subduction zone and its implications*Haekal Azief Haridhi*

Chao-Shing Lee, NTOU National Taiwan Ocean University, Keelung, Taiwan and **Haekal Azief Haridhi**, Taiwan International Graduate Program - Earth System Science Program, Academia Sinica and National Central University, Taiwan, Taipei, Taiwan

NH23F-3549 Multiple source sensitivity study to model the 28 September Sulawesi tsunami – landslide and strike slip sources*Finn Løvholt*

Finn Løvholt¹, *Haider Hasan*², *Stefano Lorito*³, *Fabrizio Romano*⁴, *Beatriz Brizuela*⁵, *Alessio Piatanesi* and *Geir Kleivstul Pedersen*, (1)Norwegian Geotechnical Institute, Oslo, Norway, (2)NED University, Karachi, Pakistan, (3)National Institute of Geophysics and Volcanology, Rome, Italy, (4)INGV National Institute of Geophysics and Volcanology, Rome, Italy, (5)Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy, (6)University of Oslo, Oslo, Norway

NH23F-3554 Large Shallow Slip Along the Palu-Koro Fault Associated with Supershear Rupture*Rishav Mallick***Rishav Mallick**¹, Eric Ostrom Lindsey¹, Yu-Ting Ku², Hongyu Zeng³, Guangcai Feng⁴, Teng Wang⁵, Judith Hubbard⁶, Kyle E Bradley⁶, Yu Wang⁶, Shengji Wei⁶ and Emma Hill⁶, (1)Earth Observatory of Singapore, Nanyang Technological University, Singapore, Singapore, (2)Institute of Earth Sciences, Academia Sinica, Institute of Earth Sciences, Taipei, Taiwan, (3)Nanyang Technological University, Singapore, Singapore, (4)Central South University, Changsha, China, (5)Nanyang Technological University, Earth Observatory of Singapore, Singapore, Singapore, (6)Earth Observatory of Singapore, Singapore, Singapore**NH23F-3555 The 2018 Sulawesi tsunami warning of need for tsunami early warning system updated after the 2011 Tohoku tsunami***Megumi Sugimoto***Megumi Sugimoto**, Kyushu University, Fukuoka, Japan**NH23F-3556 Possible cause of tsunami excitation for the Sep. 28, 2018, M_w 7.5 strike-slip Sulawesi Earthquake, Indonesia***Sidao Ni***Sidao Ni**, Xin Lin, Feng Ling, Risheng Chu and Xiaobin Cai, State Key Laboratory of Geodesy and Earth's Dynamics, Institute of Geodesy and Geophysics, Chinese Academy of Sciences, Wuhan, China**NH23F-3557 Traveling ionospheric tsunami disturbances of GPS total electron content induced by the 2018 Mw 7.5 Sulawesi Indonesia earthquake***Jann-Yeng G Liu***Jann-Yeng G Liu**, National Central University, Institute of Space Science, Taoyuan City, Taiwan and Chi Yen Lin, Institute of Space Science National Central University, Taoyuan, Taiwan**NH23F-3558 Atmospheric Control on the Infrasound Observations from the September 28th 2018 Mw 7.5 Sulawesi Indonesian Earthquake and Tsunami.***Benoit Taisne***Benoit Taisne**¹, Anna B Perttu¹, Dorianne Tailpied¹, Yizhou Luo² and David Whilldin¹, (1)Earth Observatory of Singapore, Singapore, Singapore, (2)Nanyang Technological University, Singapore, Singapore**NH23F-3559 How Access to Daily Medium-Resolution Satellite Imagery Can Aid the Global Disaster Response Community***Brittany N Zajic***Brittany N Zajic**¹, Robert Simmon¹, Joseph Mascaro², Joe D Kington IV¹ and Kelsey A Jordahl¹, (1)Planet Labs, San Francisco, CA, United States, (2)Planet, San Francisco, United States**NH23F-3560 Implications of UAV-based 3D mapping solutions for advanced disaster management: A case study of Palu City, Indonesia***Jooyeon Moon***Jooyeon Moon**¹, Duk-woo Ju¹, Dr. ¹, Won-nyoung Park², Yusuf S Djajadihardja³, Zulfikar Yurnaidi³, Yong Woon Chung³, Ji-ae Kim³, Jong-su Jeong³ and Kyung-nam Shin³, (1)Green Technology Center Korea, Seoul, South Korea, (2)Angelswing, Seoul, South Korea, (3)Agency for the Assessment and Application of Technology (BPPT), Jakarta, Indonesia

NH23F-3561 Transient Effects in Atmosphere and Ionosphere Associated with 2018 Mw 7.5 Sulawesi Indonesia Earthquake and Tsunami

Dimitar Ouzounov

Dimitar Ouzounov, Chapman University, Center of Excellence in Earth Systems Modeling & Observations, Orange, CA, United States, Sergey A Pulinet, Space Research Institute (IKI), Moscow, Russia, Dmitry Davidenko, Space Corporation Energiya, Moscow, Russia, Alexander Rozhnoi, Institute of Physics of the Earth, Moscow, Russia, Mariya Solovieva, Institute of Physics of the Earth, Moscow, Russia, Chi-Yen Lin, Center for Astronautical Physics and Engineering, National Central University, Taoyuan City, Taiwan, Taoyuan City, Taiwan, Jann-Yenq G Liu, Natl Central Univ, Chung Li, Taiwan and Masashi Hayakawa, Univ Electro Communications, Tokyo, Japan

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