

## DAFTAR PUSTAKA

- Antara Foto. (2018). *RS Anutapura Rusak Akibat Gempa*.  
<https://www.antarafoto.com/bisnis/v1538731505/rs-anutapura-rusak-akibat-gempa>
- Azizah, N. (2022). *Studi Kegempaan Kota Makassar dengan Metode PSHA (Probabilistic Seismic Hazard Analysis)* [Tugas Akhir]. Universitas Hasanuddin.
- Azzahra, A. (2019). *Analisis Efek Potensi Likuefaksi Terhadap Pondasi Tiang Pada Bangunan Gedung Don Bosco Medan* [Skripsi]. Universitas Katolik Parahyangan.
- Badan Standardisasi Nasional. (2019). SNI 1726:2019 Tata cara perencanaan ketahanan gempa untuk struktur bangunan gedung dan nongedung. In *Tata Cara Perencanaan Ketahanan Gempa Untuk Struktur Bangunan Gedung dan Non Gedung* (Issue 8). BSN.
- Badan Standarisasi Nasional. (2017). *SNI 8460:2017 Persyaratan perancangan geoteknik*. BSN.
- Badan Standarisasi Nasional. (2020a). *SNI 1727:2020 Beban desain minimum dan kriteria terkait untuk bangunan gedung dan struktur lain*. BSN.
- Badan Standarisasi Nasional. (2020b). *SNI 8899:2020 Tata cara pemilihan dan modifikasi gerak tanah permukaan untuk perencanaan gedung tahan gempa*. BSN.
- BMKG. (2016). *Tentang Gempa Bumi*. [http://inatews2.bmkg.go.id/new/tentang\\_eq](http://inatews2.bmkg.go.id/new/tentang_eq)
- BMKG. (2019). *Katalog Gempa Bumi Signifikan dan Merusak 1821-2018* (T. Prasetya & A. Sudrajat, Eds.). Pusat Gempabumi dan Tsunami BMKG.
- BMKG, & JICA. (2018). *Palu Earthquake Strong Motion Waveform by Observation System Developed by Japan*.  
[https://committees.jsce.or.jp/eec205/system/files/%E3%83%91%E3%83%AB%E5%9C%B0%E9%9C%87%E5%BC%B7%E9%9C%87%E6%B3%A2%E5%BD%A2%E8%A8%98%E9%8C%B2%E9%80%9F%E5%A0%B11022\\_0.pdf](https://committees.jsce.or.jp/eec205/system/files/%E3%83%91%E3%83%AB%E5%9C%B0%E9%9C%87%E5%BC%B7%E9%9C%87%E6%B3%A2%E5%BD%A2%E8%A8%98%E9%8C%B2%E9%80%9F%E5%A0%B11022_0.pdf)
- Bock, Y., Prawirodirdjo, L., Genrich, J. F., Stevens, C. W., Mccaffrey, R., Subarya, C., Puntodewo, S. S. O., & Calais, E. (2003). *Crustal motion in Indonesia from Global Positioning System measurements*. 108. <https://doi.org/10.1029/2001JB000324>
- Boore, D. M., Stewart, J. P., Seyhan, E., & Atkinson, G. M. (2014). NGA-West2 equations for predicting PGA, PGV, and 5% damped PSA for shallow crustal earthquakes. *Earthquake Spectra*, 30(3), 1057–1085.  
<https://doi.org/10.1193/070113EQS184M>
- Bowles, J. E. (1997). *Foundation Analysis and Design* (5th ed.). McGraw-Hill.
- Brandenberg, A. (2005). *Behaviour of Pile Foundations on Liquefied and Laterally Spreading Groung* [Disertation]. Universtity of California.
- Brandenberg, S. J., Boulanger, R. W., Kutter, B. L., & Chang, D. (2007). Static Pushover Analyses of Pile Groups in Liquefied and Laterally Spreading Ground in Centrifuge Tests. *Journal of Geotechnical and Geoenvironmental Engineering*, 133(9), 1055–1066. [https://doi.org/10.1061/\(asce\)1090-0241\(2007\)133:9\(1055\)](https://doi.org/10.1061/(asce)1090-0241(2007)133:9(1055))

- Campbell, K. W., & Bozorgnia, Y. (2014). NGA-West2 ground motion model for the average horizontal components of PGA, PGV, and 5% damped linear acceleration response spectra. *Earthquake Spectra*, 30(3), 1087–1114. <https://doi.org/10.1193/062913EQS175M>
- Castro, G. (1995). Empirical methods in liquefaction evaluation. *Primer Ciclo de Conferencias Internacionales Leonardo Zeevaert*. <https://www.researchgate.net/publication/288007389>
- Chen, W. F., & Lui, E. M. (2006). *Earthquake Engineering for Structural Design*. CRC Press.
- Chen, W. F., & Scawthorn, C. (2002). Earthquake engineering handbook. In *Earthquake Engineering Handbook*. <https://doi.org/10.5860/choice.40-5239>
- Chiou, B. S. J., & Youngs, R. R. (2014). Update of the Chiou and Youngs NGA model for the average horizontal component of peak ground motion and response spectra. *Earthquake Spectra*, 30(3), 1117–1153. <https://doi.org/10.1193/072813EQS219M>
- Das, B. M., & Ramana, G. v. (2010). *Principles of Soil Dynamics*. Cengage Learning.
- Das, B. M., & Sobhan, K. (2014). *Principles of Geotechnical Engineering* (8th ed.). Cengage Learning.
- Day, R. W. (2002). *Geotechnical Earthquake Engineering Handbook*. McGraw-Hill.
- Djinargo, A. I. F. (2018). *Analisis Fondasi Tangki Minyak pada Tanah Pasiran Berdasarkan Simulasi Numeris* [Tesis]. Universitas Gadjah Mada Yogyakarta .
- Encyclopedia Britannica. (2012). *soil liquefaction*. Encyclopedia Britannica. <https://www.britannica.com/science/Kastanozem#/media/1/1775711/167786>
- European Commision Joint Research Centre. (2018). *Mw 7.5 Earthquake in Indonesia 28, Sep 2018*.
- Fine Civil Engineering Software. (2017). *Geo5 Pile Group* (2017.81).
- Finn, W. D. L., & Fujita, N. (2002). Piles in liquefiable soils: Seismic analysis and design issues. *Soil Dynamics and Earthquake Engineering*, 22(9–12), 731–742. [https://doi.org/10.1016/S0267-7261\(02\)00094-5](https://doi.org/10.1016/S0267-7261(02)00094-5)
- Gandini, D. R. A., Setiawan, Y. A., Madrinovella, I., Abdullah, A., Pranata, B., Suhardja, S. K., & Aisy, S. R. (2022). Hasil Awal Analisis Peak Ground Acceleration di Bali. *Jurnal Geofisika*, 20(02), 71–75.
- Google Earth. (2022a). *Anutapura General Hospital Location Map*. <https://earth.google.com/web/@-0.90009395,119.84937922,15.04030731a,251.07850694d,35y,0h,0t,0r>
- Google Earth. (2022b). *Balaroa Map*. <https://earth.google.com/web/@-0.90456502,119.84301127,26.44263545a,2886.82488481d,35y,0h,0t,0r>
- Green, R. A., & Bommer, J. J. (2019). What is the smallest earthquake magnitude that needs to be considered in assessing liquefaction hazard? *Earthquake Spectra*, 35(3), 1441–1464. <https://doi.org/10.1193/032218EQS064M>

- Han, P., Yu, H., & Yu, X. (2021). A sloshing induced Tsunami: 2018 Palu Bay event. *Applied Ocean Research*, 117, 102915. <https://doi.org/10.1016/j.apor.2021.102915>
- Hardiyatmo, H. C. (2019). *Mekanika Tanah I* (7th ed.). Gadjah Mada University Press.
- Hardiyatmo, H. C. (2020). *Analisis dan Perancangan Fondasi II* (5th ed.). Gadjah Mada University Press.
- Hardiyatmo, H. C. (2022). *Rekayasa Gempa untuk Analisis Struktur & Geoteknik* (1st ed.). Gadjah Mada University Press.
- Idriss, I. M., & Boulanger, R. W. (2006). Semi-empirical procedures for evaluating liquefaction potential during earthquakes. *Soil Dynamics and Earthquake Engineering*, 26(2-4 SPEC. ISS.), 115–130. <https://doi.org/10.1016/j.soildyn.2004.11.023>
- Idriss, I. M., & Boulanger, R. W. (2008). *Soil Liquefaction During Earthquakes*. EERI Publication.
- Irsyam, M. (2022). *Geo Talk XIX 22: Perkembangan Peta Gempa dan Penerapannya dalam Perencanaan Infrastruktur dan Gedung Tahan Gempa di Indonesia*.
- Ishihara, K. (1996). *Soil Behaviour in Earthquake Geotechnics*. Clarendon Press.
- Ishihara, K., & Koga, Y. (1981). Case Studies of Liquefaction in the 1964 Niigata Earthquake. *Soils and Foundations*, 21(3), 35–52. [https://doi.org/10.3208/sandf1972.21.3\\_35](https://doi.org/10.3208/sandf1972.21.3_35)
- Ishihara, K., & Yoshimine, M. (1992). EVALUATION OF SETTLEMENTS IN SAND DEPOSITS FOLLOWING LIQUEFACTION. *Soils and Foundations*, 32(1), 173–188. <https://doi.org/10.3208/sandf1972.32.173>
- Iwasaki, & T. (1978). A practical method for assessing soil liquefaction potential based on case studies at various sites in Japan. *Proc. Second Int. Conf. Microzonation Safer Construction Research Application*, 1978, 2, 885–896. <http://ci.nii.ac.jp/naid/10012479770/en/>
- Iwasaki, T., Tokida, K., & Tatsuoka, F. (1981). Soil Liquefaction Potential Evaluation with Use of the Simplified Procedure. *International Conferences on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics*, 12, 209–214. <https://scholarsmine.mst.edu/icrageesd/01icrageesd/session02/12>
- Kardogan, P. S. O., Isik, N. S., Onur, M. I., & Bhattacharya, S. (2019). A Study on the Laterally Loaded Pile Behaviour in Liquefied Soil Using P-Y Method. *IOP Conference Series: Materials Science and Engineering*, 471(4). <https://doi.org/10.1088/1757-899X/471/4/042015>
- Kementerian ATR / BPN. (2018). *Peta Zona Rawan Bencana Palu dan Sekitarnya*.
- Kiyota, T., Furuichi, H., Hidayat, R. F., Tada, N., & Nawir, H. (2020). Overview of long-distance flow-slide caused by the 2018 Sulawesi earthquake, Indonesia. *Soils and Foundations*, 60(3), 722–735. <https://doi.org/10.1016/j.sandf.2020.03.015>
- Kramer, S. L. (1996). *Geotechnica Earthquake Engineering*. 673.

- Lagesse, R., Brennan, A., & Rusydy, I. (2020). Investigation and analysis of liquefaction-induced debris flows in Palu, Indonesia following the 28th september 2018 central Sulawesi earthquake. *17th World Conference on Earthquake Engineering, September 2018*.
- Lambe, T. W., & Whitman, R. v. (1969). *Soil Mechanics*. Wiley.
- Loehr, J. E., Bowders, J. J., Ge, L., Likos, W. J., Luna, R., Maerz, N., Rosenblad, B. L., & Stephenson, R. W. (2011). *Engineering Policy Guidelines for Design of Drilled Shafts*. Missouri Department of Transportation.
- Madabhushi, G., Knappett, J., & Haigh, S. (2010). *Design of Pile Foundations in Liquefiable Soils*. Imperial College Press.
- Manoppo, F. J., Warouw, A. G. D., Talumepa, J. R., & Manoppo, C. J. (2019). Potential failure of Soekarno Bridge Foundation Cause of Liquefaction. *Lowland Technology International Journal*, 21(3), 151–158.
- Marcuson, William F., I. (1978). Definition of Terms Related to Liquefaction. *Journal of the Geotechnical Engineering Division*, 104(9), 1197–1200.  
<https://doi.org/10.1061/AJGEB6.0000688>
- Mase, L. Z. (2018). Studi Kehandalan Metode Analisis Likuefaksi Menggunakan SPT Akibat Gempa 8,6 Mw, 12 September 2007 di Area Pesisir Kota Bengkulu. *Jurnal Teknik Sipil*, 25(1), 53. <https://doi.org/10.5614/jts.2018.25.1.7>
- Mase, L. Z. (2019). Performance of NGA Models in Predicting Ground Motion Parameters of The Strong Earthquake. *Journal of the Civil Engineering Forum*, 5(3), 227. <https://doi.org/10.22146/jcef.46651>
- Meyerhof, G. G. (1956). Penetration Tests and Bearing Capacity of Cohesionless Soils. *Journal of the Soil Mechanics and Foundations Division*, 82(1).  
<https://doi.org/10.1061/JSFEAQ.0000001>
- Mollamahmutoglu, M., Kayabali, K., Beyaz, T., & Kolay, E. (2003). Liquefaction-related building damage in Adapazari during the Turkey earthquake of August 17, 1999. *Engineering Geology*, 67(3–4), 297–307. [https://doi.org/10.1016/S0013-7952\(02\)00190-4](https://doi.org/10.1016/S0013-7952(02)00190-4)
- Montgomery, J., Wartman, J., Reed, A. N., Gallant, A. P., Hutabarat, D., & Mason, H. B. (2021). Field reconnaissance data from GEER investigation of the 2018 MW 7.5 Palu-Donggala earthquake. *Data in Brief*, 34, 106742.  
<https://doi.org/10.1016/j.dib.2021.106742>
- Muhanifah, H., Adi, A. D., & Faris, F. (2021). Liquefaction investigation of Balaroa, Central Sulawesi on liquefied and non-liquefied areas. *IOP Conference Series: Earth and Environmental Science*, 861(5), 052039. <https://doi.org/10.1088/1755-1315/861/5/052039>
- Pacific Earthquake Engineering Research Center. (2014). *PEER Ground Motion Database NGA-West2*.  
[https://ngawest2.berkeley.edu/spectras/new?sourceDb\\_flag=1](https://ngawest2.berkeley.edu/spectras/new?sourceDb_flag=1)
- PEER. (2010). *Users Manual for the PEER Ground Motion Database Web Application*.

- Pemerintah Provinsi Sulawesi Tengah. (2018). *Rencana Induk Pemulihan dan Pembangunan Kembali Wilayah Pascabencana Provinsi Sulawesi Tengah* (D. Lenggogeni et. al., Ed.). Kedeputian Bidang Pengembangan Regional, Kementerian PPN/ Bappenas.
- PPMB-ITB, & PUSKIM. (2021). *Desain Spektra Indonesia (RSA)*  
<http://rsa.ciptakarya.pu.go.id/2021/>.
- Prakash, Shamsheer., & Sharma, H. D. (1990). *Pile foundations in engineering practice*. John Wiley and Sons.
- PT. Adhi Karya. (2022). *Data Teknis Pembangunan Gedung AMC, RSU Anutapura, Kota Palu*.
- PuSGeN. (2017). *Peta Sumber dan Bahaya Gempa Indonesia Tahun 2017* (M. Irsyam et. al., Ed.; 1st ed.). Puslitbang Perumahan dan Permukiman, Balitbang, Kementerian PUPR.
- Reese, L. C., & O'Neill, M. W. (1989). New Design Method for Drilled Shafts from Common Soil and Rock Tests. *Foundation Engineering: Current Principles and Practices*.
- Reiter, L. (1990). *Earthquake Hazard Analysis: Issues and Insight*. Columbia University Press.
- Seed, H. B. (1987). Design Problems in Soil Liquefaction. *Journal of Geotechnical Engineering*, 113(8), 827–845.
- Seed, H. B., & Idriss, I. M. (1971). Simplified Procedure for Evaluating Soil Liquefaction Potential. *Journal of the Soil Mechanics and Foundations Division*, 97(9), 1249–1273. <https://doi.org/10.1061/JSFEAQ.0001662>
- Skempton, A. W. (1986). Standard penetration test procedures and the effect in sands of overburden pressure, relative density, particle size, ageing and overconsolidation. *Geotechnique*, 3, 425–447.
- Sonmez, H., & Gokceoglu, C. (2005). A liquefaction severity index suggested for engineering practice. *Environmental Geology*, 48(1), 81–91.  
<https://doi.org/10.1007/s00254-005-1263-9>
- Stringer, M. E., & Madabhushi, S. P. G. (2010). Effect of Liquefaction on Pile Shaft Friction Capacity. *International Conferences on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics*, 16.
- Sukanto, R. (1973). *Peta Geologi Regional Tinjau Lembar Palu*. Pusat Penelitian dan Pengembangan Geologi.
- Tarback, E. J., Lutgens, F. K., & Tasa, D. G. (2016). *Earth: An Introduction to Physical Geology* (12th ed.). Pearson Education.
- Tohari, A., Wardhana, D. D., Hanif, M., & Koizumi, K. (2021). *Understanding of subsurface conditions controlling flow liquefaction occurrence during the 2018 Palu earthquake based on resistivity profiles*. 03002, 4–8.
- Towhata, I. (2008). *Geotechnical Earthquake Engineering*. Springer.



- Tsuchida, H. (1970). Prediction and countermeasure against the liquefaction in sand deposits. *Abstract of the Seminar in the Port and Harbor Research Institute*, 31–333. <http://ci.nii.ac.jp/naid/10007805219/en/>
- United States Geological Survey (USGS). (2018). *M7.5 Palu, Indonesia Earthquake of September 28, 2018*. <https://earthquake.usgs.gov/earthquakes/eventpage/us1000h3p4/executive>
- Walpersdorf, A., Vigny, C., Manurung, P., Subarya, C., & Sutisna, S. (1998). Determining the Sula block kinematics in the triple junction area in Indonesia by GPS. *Geophysical Journal International*, 135(2), 351–361. <https://doi.org/10.1046/j.1365-246X.1998.00641.x>
- Widyaningrum, R. (2012). Penyelidikan geologi teknik potensi liquifaksi daerah Palu , Provinsi Sulawesi Tengah. *Kementrian Energi Dan Sumber Daya Mineral*, 57, 43. <https://luk.staff.ugm.ac.id/artikel/gempa/Palu/RisnaWidyaningrumPaper2012.pdf>
- Yoshimine, M., Nishizaki, H., Amano, K., & Hosono, Y. (2006). Flow deformation of liquefied sand under constant shear load and its application to analysis of flow slide of infinite slope. *Soil Dynamics and Earthquake Engineering*, 26(2-4 SPEC. ISS.), 253–264. <https://doi.org/10.1016/j.soildyn.2005.02.016>
- Youd, T. L. (1984). Geologic effects-liquefaction and associated ground failure. *Proceedings of the Geologic and Hydrologic Hazards Training Program, US Geological Survey Open-File Report, USGS*, 210–232.
- Youd, T. L. (2003). *70 Liquefaction mechanisms and induced ground failure* (pp. 1159–1173). [https://doi.org/10.1016/S0074-6142\(03\)80184-5](https://doi.org/10.1016/S0074-6142(03)80184-5)
- Youd, T. L., & Idriss, I. M. (2001). Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils. *Journal of Geotechnical and Geoenvironmental Engineering*, 127(4), 297–313. [https://doi.org/10.1061/\(asce\)1090-0241\(2001\)127:4\(297\)](https://doi.org/10.1061/(asce)1090-0241(2001)127:4(297))
- Youd, T. L., Tinsley, J. C., Perkins, D. M., King, E. J., & Preston, R. F. (1979). Liquefaction Potential Map of San Fernando Valley, California. *Geological Survey Circular (United States)*, 807, 37–48.