



DAFTAR PUSTAKA

- Abidin, H. Z., Andreas, H., Gumilar, I., Sidiq, T. P., Gamal, M., & Murdohardono, D. (2010). Studying Land Subsidence in Semarang (Indonesia) using Geodetic Methods. *FIG Congress, April 2010*.
- Abidin, H. Z., Djaja, R., Darmawan, D., Hadi, S., Akbar, A., Rajiyowiryono, H., Sudibyo, Y., Meilano, I., Kasuma, M. A., Kahar, J., & Subarya, C. (2001). Land subsidence of Jakarta (Indonesia) and its geodetic monitoring system. *Natural Hazards*, 23(2–3). <https://doi.org/10.1023/A:1011144602064>
- Andreas, H., Abidin, H. Z., Sarsito, D. A., & Pradipra, D. (2018). Insight Analysis On Dyke Protection Against Land Subsidence. *Geoplanning : Journal of Geomatics and Planning*, 5(1).
- Azeriansyah, R., & . H. (2019). Integration PS-InSAR and MODIS PWV Data to Monitor Land Subsidence in Semarang City 2015–2018. *KnE Engineering*. <https://doi.org/10.18502/keg.v4i3.5826>
- Chai, T., & Draxler, R. R. (2014). Root mean square error (RMSE) or mean absolute error (MAE)? -Arguments against avoiding RMSE in the literature. *Geoscientific Model Development*, 7(3). <https://doi.org/10.5194/gmd-7-1247-2014>
- Chaussard, E., Amelung, F., Abidin, H., & Hong, S. H. (2013). Sinking cities in Indonesia: ALOS PALSAR detects rapid subsidence due to groundwater and gas extraction. *Remote Sensing of Environment*, 128, 150–161. <https://doi.org/10.1016/j.rse.2012.10.015>
- ESA. (2015). European Space Agency. *User Guides - Sentinel-1 SAR - Sentinel Online*. Diambil dari <https://sentinel.esa.int/web/sentinel/user-guides/sentinel-1-sar> pada 12 Januari 2021
- Ferretti, A., Monti-Guarnieri, A. V., Prati, C. M., Rocca, F., & Massonnet, D. (2007). *INSAR Principles B*. ESA publications.
- Ferretti, A., Prati, C., & Rocca, F. (2001). Permanent scatterers in SAR interferometry. *IEEE Transactions on Geoscience and Remote Sensing*, 39(1). <https://doi.org/10.1109/36.898661>
- Galloway, D., Jones, D. R., & Ingebritsen, S. E. (2000). Land subsidence in the United States. *US Geological Survey Circular*, 1182. <https://doi.org/10.3133/fs16500>
- Hanafiah Ismullah, I. (2004). Pengolahan Fasa untuk Mendapatkan Model Tinggi Permukaan Dijital (DEM) pada Radar Apertur Sintetik Interferometri (INSAR) Data Satelit. *ITB Journal of Sciences*, 36(1). <https://doi.org/10.5614/itbj.sci.2004.36.1.2>
- Hooper, A. J., Segall, P., & Zebker, H. (2007). Persistent scatter radar interferometry for crustal deformation studies and modeling of volcanic deformation. *Journal of Geophysical Research Solid Earth*, 112(July).
- Hooper, A., Segall, P., & Zebker, H. (2007). Persistent scatterer interferometric synthetic aperture radar for crustal deformation analysis, with application to Volcán Alcedo, Galápagos. *Journal of Geophysical Research: Solid Earth*, 112(B7). <https://doi.org/https://doi.org/10.1029/2006JB004763>
- Hooper, Andrew, Zebker, H., Segall, P., & Kampes, B. (2004). A new method for



- measuring deformation on volcanoes and other natural terrains using InSAR persistent scatterers. *Geophysical Research Letters*, 31(23). <https://doi.org/10.1029/2004GL021737>
- Iodice, A. (2009). *A survey of differential SAR interferometry for surface displacement Monitoring. European Microwave Week 2009, EuMW 2009: Science, Progress and Quality at Radiofrequencies, Conference Proceedings - 6th European Radar Conference, EuRAD 2009.*
- Iskandar, S. A., Helmi, M., Widada, S., & Rochaddi, B. (2020). Analisis Geospasial Area Genangan Banjir Rob dan Dampaknya pada Penggunaan Lahan Tahun 2020 - 2025 di Kota Pekalongan Provinsi Jawa Tengah. *Indonesian Journal of Oceanography*, 2(3).
- Julzarika, A. (2010). Pemanfaatan *Interferometric Synthetic Aperture Radar* (InSAR) Untuk Pemodelan 3D (DSM, DEM, dan DTM). *Majalah Sains Dan Teknologi Dirgantara*, 4(4).
- Ketelaar, G., Van Leijen, F., Marinkovic, P., & Hanssen, R. (2005). Initial point selection and validation in PS-InSAR using integrated amplitude calibration. *International Geoscience and Remote Sensing Symposium (IGARSS)*, 8(May 2014), 5490–5493. <https://doi.org/10.1109/IGARSS.2005.1525984>
- Kuehn, F., Albiol, D., Cooksley, G., Duro, J., Granda, J., Haas, S., Hoffmann-Rothe, A., & Murdhardono, D. (2010). *Detection of land subsidence in Semarang, Indonesia, using stable points network (SPN) technique. Environmental Earth Sciences*, 60(5). <https://doi.org/10.1007/s12665-009-0227-x>
- Marfai, M. A., & King, L. (2008). Tidal inundation mapping under enhanced land subsidence in Semarang, Central Java Indonesia. *Natural Hazards*, 44(1). <https://doi.org/10.1007/s11069-007-9144-z>
- Meyer, F.J., (2017). *Sentinel-1 InSAR Processing Using the SNAP Toolbox*, Alaska Satellite Facility. June, 1-19. https://ASF.alaska.edu/wp-content/uploads/2019/05/generate_insar_with_s1tbx_v5.4.pdf.
- Nashrullah, S., Aprijanto, Pasaribu, J. M., Hazarika, M. K., & Samarakoon, L. (2013). Study of flood inundation in pekalongan, central java. *34th Asian Conference on Remote Sensing 2013, ACRS 2013*, 4. <https://doi.org/10.30536/j.ijreses.2013.v10.a1845>
- National Oceanic and Atmospheric Association. (2012). Lidar 101 : An Introduction to Lidar Technology , Data , and Applications. *NOAA Coastal Services Center, November*.
- Oštir, K., & Komac, M. (2007). *PSInSAR and DInSAR methodology comparison and their applicability in the field of surface deformations-A case of NW Slovenia. Geologija*, 50(1). <https://doi.org/10.5474/geologija.2007.007>
- Peraturan Daerah Kota Pekalongan Nomor 9 Tahun 2020 Tentang Perubahan Atas Peraturan Daerah Kota Pekalongan Nomor 30 Tahun 2011 Tentang Rencana Tata Ruang Wilayah Kota Pekalongan Tahun 2009-2029, (2020).
- Prasetyo, Y., & Subiyanto, S. (2014). Studi Penurunan Muka Tanah (Land Subsidence) Menggunakan Metode *Permanent Scatterer Interferometric Synthetic Aperture Radar* (PS-InSAR) Di Kawasan Kota Cimahi - Jawa Barat. *Teknik*, 35(2). <https://doi.org/10.14710/teknik.v35i2.7184>



- Sabri, L. M. (2019). *Implementation of CORS GNSS and local geoid for precise orthometric height determination in land subsidence region (a case study in Semarang City)*. *JGISE: Journal of Geospatial Information Science and Engineering*, 2(1). <https://doi.org/10.22146/jgise.40828>
- Safetyani, N. (2020). Kajian Daerah Rentan Banjir Rob Kota Pekalongan Menggunakan Tasseled Cap Transformation dan Topographic Wetness Index. Skripsi. Universitas Gadjah Mada.
- Sanchez, J.F. (2022). European Space Agency. *Copernicus POD Service File Format Specifications*, April, 1-141. https://sentinel.esa.int/documents/247904/351187/Copernicus_Sentinels_PO_D_Service_File_Format_Specification
- Sidiq, T. P., Gumilar, I., Meilano, I., Abidin, H. Z., Andreas, H., & Permana, A. (2021). Land Subsidence of Java North Coast Observed by SAR Interferometry. *IOP Conference Series: Earth and Environmental Science*, 873(1). <https://doi.org/10.1088/1755-1315/873/1/012078>
- Simarmata, N., Elyza, F., & Vatiady, R. (2019). Kajian Citra Satelit Spot-7 Untuk Estimasi Standing Carbon Stock Hutan Mangrove Dalam Upaya Mitigasi Perubahan Iklim (Climate Changes) di Lampung Selatan. *Jurnal Penginderaan Jauh Dan Pengolahan Data Citra Digital*, 16(1).
- Simons, M., & Rosen, P. A. (2007). *Interferometric synthetic aperture radar geodesy*.
- Taftazani, I., Waljiyanto, W., Djojomartono, P., Yulaikhah, Y., Adhi, A., Widjajanti, N., & Cahyono, B. (2016). Uji Kualitas Data Pengukuran Titik Kontrol Pemantauan Waduk Sermo Tahun 2016.
- Taufik, M., Anjasmaria, I. M., & Ulin, R. F. (2020). Analisis Penurunan Muka Tanah Di Kabupaten Gresik Tahun 2015 Hingga 2017 Dengan Metode PS-InSAR. *Geoid*, 15(1). <https://doi.org/10.12962/j24423998.v15i1.3868>
- Thorpe, S. (2018). *Time series analysis of surface deformation associated with fluid injection and induced seismicity in Timpson, Texas using DInSAR methods*. Western University, January.
- Whittaker, B. N., & Reddish, D. J. (1990). *Subsidence: occurrence, prediction and control (Developments in Geotechnical Engineering*, 56). *International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts*, 27(2). [https://doi.org/10.1016/0148-9062\(90\)95372-8](https://doi.org/10.1016/0148-9062(90)95372-8)
- Yagüe-Martínez, N., Prats-Iraola, P., Rodríguez González, F., Brcic, R., Shau, R., Geudtner, D., Eineder, M., & Bamler, R. (2016). Interferometric Processing of Sentinel-1 TOPS Data. *IEEE Transactions on Geoscience and Remote Sensing*, 54(4), 2220–2234. <https://doi.org/10.1109/TGRS.2015.2497902>
- Yastika, P. E., & Shimizu, N. (2016). *Applications of DInSAR for Ground Surface Deformation Measurements-Case Studies of Subsidence Measurements and Deformation Detections Due to an Earthquake Surface Movement Monitoring (SMM) by InSAR View project Identification and mitigation of urban water*. *The 37th West Japan Symposium on Rock Engineering 2016, September*, 91–97. <https://www.researchgate.net/publication/319876190>
- Yudinugroho, M. (2020). Analisis Pergerakan Permukaan Tanah Pada Sesar Opak Menggunakan Metode Quasi Persistent Scatterer Interferometry (Q-PSI)



UNIVERSITAS
GADJAH MADA

**Analisis Penurunan Muka Tanah Wilayah Kota Pekalongan dengan Metode Persistent Scatterer
Interferometric Synthetic Aperture Radar (PS-INSAR)**

Rafiqi Ariawidoyoko Raharjo, Dr. Ir. Harintaka, S.T., M.T., IPU. ASEAN Eng.

Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Synthetic Aperture Radar (SAR). Tesis. Universitas Gadjah Mada.