

DAFTAR PUSTAKA

- Andreastuti SD, Alloway BV, Smith IEM. 2000. A detailed tephrostratigraphic framework at Merapi Volcano, Central Java, Indonesia: Implications for eruption prediction and hazard assessment. *Journal of Volcanology and Geothermal Research* 100, 51–67
- Anonim. 2010. *Buku Pedoman Penambangan Pasir*. Dirjen Sumberdaya Air, Kementerian Pekerjaan Umum dan YACHIYO ENGINEERING CO., LTD
- Anonim. 2011. *Detailed Design On Rehabilitation Of Aged Sabo Facilities And Putih River Channel Improvement After 2010 Mt. Merapi Eruption*. Dirjen Sumberdaya Air, Kementerian Pekerjaan Umum dan YACHIYO ENGINEERING CO., LTD
- Arrella K.E., Fisher, P.F., Tate N.J, Bastin L. 2007. A fuzzy c-means classification of elevation derivatives to extract the morphometric classification of landforms in Snowdonia, Wales. *Computers & Geosciences* 33,1366–1381
- Ashmore P. 1991. Channel Morphology and Bed Load Pulses in Braided, Gravel-Bed Streams. *Geografiska Annaler. Series A, Physical Geography, Vol. 73, No. 1, 37-52*
- Attal M and Lave J. 2009. Pebble abrasion during fluvial transport: Experimental results and implications for the evolution of the sediment load along rivers. *JOURNAL OF GEOPHYSICAL RESEARCH, VOL. 114, F04023*
- Bailly, JS., Kinzel, PJ., Allouis, T., Feurer, D., Coarer, YL. 2012. Airborne LiDAR Methods Applied to Riverine Environments. dalam Carbonneau, PE., Piegay, H. *Fluvial Remote Sensing for Science and Management*. West Sussex: John Wiley & Sons, Ltd
- Bardintzeff, J.M., 1984. Merapi Volcano (Java, Indonesia) and Merapi-type Nue'es Ardentes. *Bull. Volcanol.* 47 (3), 433–446
- Bertoldi, W., Piegay, H., Buffin-Belanger, T., Graham, D., Rice, S. 2012 Applications of Close-range Imagery in River Research. dalam Carbonneau, PE., Piegay, H. *Fluvial Remote Sensing for Science and Management*. West Sussex: John Wiley & Sons, Ltd
- Biedenharn, D.S., Thorne, C.R., Watson, C.C., 2000. Recent morphological evolution of the Lower Mississippi River. *Geomorphology* 34, 227–249
- Bignami, C., Ruch, J., Chini, M., Neri, M., Buongiorno, M.F., Hidayati, S., Sayudi, D.S., Surono, 2013. Pyroclastic density current volume estimation after the 2010 Merapi volcano eruption using X-band SAR. *Journal of Volcanology and Geothermal Research* 261, 236–243

- Bird, S., D. Hogan, and J. Schwab. 2010. Photogrammetric monitoring of small streams under a riparian forest canopy, *Earth Surf. Processes Landforms*, 35, 952–970
- Bishop, P. 2007. Long-term landscape evolution: Linking tectonics and surface processes, *Earth Surf. Processes Landforms*, 32, 329–365
- Bjerklie, D.M., Moller, D.K., Smith, L., Dingman, S.L., 2005. Estimating discharge in rivers using remotely sensed hydraulic information. *Journal of Hydrology*, 309, 191–209
- Bjerklie,DM. 2007. Estimating the bankfull velocity and discharge for rivers using remotely sensed river morphology information. *Journal of Hydrology*, 341, 144–155
- Bogie, I. dan Mackenzie, K.M., 1998. The application of a volcanic facies models to an andesitic stratovolcano hosted geothermal system at Wayang Windu, Java, Indonesia. *Proceedings of 20th NZ Geothermal Workshop*, 265-276
- Bolongaro-Crevenna A., Torres-Rodri'guez V, Soranic V, Frame D, Ortiz MA. Geomorphometric Analysis for Characterizing Landforms in Morelos State, Mexico. *Geomorphology*, 67, 407–422
- Branney, M. J. and Kokelaar, P. 2002. *Pyroclastic Density Currents and the Sedimentation of Ignimbrites*. Geological Society of London, Memoirs, 27
- Brasington J, Langham J, Rumsby B. 2003. Methodological sensitivity of morphometric estimates of coarse fluvial sediment transport. *Geomorphology*, 53, 299–316
- Brasington, J., Rumsby, B.T., McVey, R.A., 2000. Monitoring and modelling morphological change in a braided gravel-bed river using high resolution GPS-based survey. *Earth Surf. Process. Landf.*, 25 (9), 973–990
- Brewer, P.A., and Passmore, D.G., 2002, Sediment budgeting techniques in gravel-bed rivers in Jones, S.J., and Frostick, L.E., eds., *Sediment Flux to Basins: Causes, Controls, and Consequences*: London, UK, Geological Society of London, 97-113
- Bridge, J.S., 1993. The interaction between channel geometry, water flow, sediment transport and deposition in braided rivers. In: Best, J.L., Bristow, C.S._Eds., *Braided Rivers*. Geol. Soc. Spec. Publ. 75 Geological Society, London, 13–71
- Brierley G, and Fryirs K. 2009. Don't Fight the Site: Three Geomorphic Considerations in Catchment-Scale River Rehabilitation Planning. *Environmental Management*, 43, 1201–1218
- Bronto, S. 2006. Fasies gunung api dan aplikasinya. *Jurnal Geologi Indonesia*, Vol. 1, No. 2, 59-71

- Cahyono, J. 2000. Pengantar Teknologi Sabo. <http://jcpoweryogyakarta.blogspot.com/2009/03/teknologi-sabo-dam.html>.
- Cahyono, J. 2013. Pedoman Operasi Dan Pemeliharaan Prasarana Pengendali Lahar. http://jcpoweryogyakarta.blogspot.co.id/2014/07/pedoman-operasi-dan-pemeliharaan_8.html
- Camporeale, C., Perucca, E., Ridolfi, L., 2008. Significance of cutoff in meandering river dynamics. *Journal of Geophysical Research* 113, F01001
- Camus, G., A. Gourgaud, P. C. Mossand-Berthommier, and P. M. Vincent, 2000, Merapi (Central Java, Indonesia): An outline of the structural and magmatological evolution, with a special emphasis to the major pyroclastic events, *Journal of Volcanology and Geothermal Research*, 100, 139-163
- Capra L, Borselli L, Varley N, Gavilanes-Ruiz JC, Norini G, Sarocchi D, Caballero L, Cortes A (2010) Rainfall-triggered lahars at Volcán de Colima, Mexico: surface hydro-repellency as initiation process. *J Volcanol Geotherm Res*, 189,105–117
- Carbonneau, PE., Piegay, H. 2012. Introduction: The Growing Use of Imagery in Fundamental and Applied River Sciences. dalam Carbonneau, PE., Piegay, H. *Fluvial Remote Sensing for Science and Management*. West Sussex:John Wiley & Sons, Ltd
- Cavalli M., Tarolli P., Marchi L. & Dalla Fontana G. 2008. The effectiveness of airborne LiDAR data in the recognition of channel-bed morphology. *Catena*, 73(3), 249-260
- Cavalli M., Trevisani S., Goldin B., Mion E., Crema S., Valentinotti R. 2013. Semiautomatic derivation of channel network from a high-resolution DTM: the example of an Italian alpine region. *European Journal of Remote Sensing*, 46, 152-174
- Charbonnier, S., Germa, A., Connor, C.B., Gertisser, R., Preece, K., Komorowski, J.C., Lavigne, F., Dixon, T., Connor, L., 2013. Evaluation of the impacts of the 2010 pyroclastic density currents at Merapi volcano from high-resolution satellite imagery, field investigations and numerical simulations. *Journal of Volcanology and Geothermal Research*, 261, 295–315
- Charlton, R. 2008. *Fundamentals of Fluvial Geomorphology*. New York: Routledge
- Chow, V.T., 1959. *Open-Channel Hydraulic*. McGraw-Hill, New York
- Conway SJ, Decaulne A, Balme MR, Murray JB, Towner MC. 2010. A new approach to estimating hazard posed by debris flows in the Westfjords of Iceland. *Geomorphology*, 114(4), 556–572

- Croke, J. Todd, P., Thompson, C., Watson, F., Denham, R., Khanal, G. 2013. The use of multi temporal LiDAR to assess basin-scale erosion and deposition following the catastrophic January 2011 Lockyer flood, SE Queensland, Australia *Geomorphology*, 184, 111–126
- Cronin, S.J., Neall, V.E., Lecointre, J.A., Palmer, A.S., 1997. Changes in Whangaehu river lahar characteristics during the 1995 eruption sequence, Ruapehu volcano, New Zealand. *Journal of Volcanology and Geothermal Research*, 76, 47–61
- Cronin, S.J., Neall, V.E., Lecointre, J.A., Palmer, A.S., 1999. Dynamic interactions between lahars and streamflow: a case study from Ruapehu volcano, New Zealand. *Geological Society of America Bulletin*, 111, 28–38
- De Belizal E. 2012. Les corridors de lahars du volcan Merapi (Java, Indonesie): des espaces entre risque et ressource. Contribution a la geographie des risques au Merapi. *Disertasi*. Geographie. Universite Pantheon-Sorbonne - Paris I, Francais
- De Bélizal, E., Lavigne, F. Hadmoko, DS., Degeai, JP., Dipayana, G.A., Mutaqin, BW., Marfai., MA., Cooquet, M. Le Mauff, B., Robin, AK., Vidal, C., Choelik Noer dan Aisyah, N. 2013. Rain-triggered lahars following the 2010 eruption of Merapi volcano, Indonesia: A major risk, *Journal of Volcanology and Geothermal Research*, 261, 330–347
- Dibiyosaputro, S., Dipayana, AG., Nugraha, H., Pratiwi, K., Valeda, HP. 2015. Lahar at Kali Konto after the 2014 Eruption of Kelud Volcano, East Java: Impacts and Risk. *Forum Geografi*, 29 (1), 59 - 72
- Dingman, S.L. 2009. *Fluvial hydraulics*. New York: Oxford University Press, Inc.
- Dipayana, GA. 2013. Lahar Pasca Erupsi Gunungapi Merapi 2010 di Kali Putih, Magelang, Jawa Tengah: Karakteristik, Dampak Terhadap Perubahan Morfologi Sungai, dan Pemodelan dengan LAHARZ, *Tesis*. UGM; Yogyakarta
- Dobran, F.. 2001. *Volcanic Processes; Mechanisms in Material Transport*. New York: Springer Science+Business Media
- Eaton B.C., Millar R G., Davidson S. 2010. Channel patterns: Braided, anabranching, and single-thread. *Geomorphology*, 120, 353–364
- Evans I.S., Hengl T., Gorsevski P. 2009. Applications in Geomorphology. dalam Hengl, T., Reuter, H.I., *Geomorphometry; Concepts, Software, Applications*. Elsevier. Amsterdam, The Netherlands
- Fisher, R.V., Schmincke, H.U. 1984. *Pyroclastic Rocks*. Berlin:Springer-Verlag

- Fonstad, M. A., and Marcus W. A. 2005. Remote sensing of stream depths with hydraulically assisted bathymetry (HAB) models, *Geomorphology*, 72, 320–339
- Francesco Fiorillo, F., Wilson, RC. 2004. Rainfall induced debris flows in pyroclastic deposits, Campania (southern Italy). *Engineering Geology*, 75, 263–289
- French J. R. 2003. Airborne Lidar in Support of Geomorphological and Hydraulic Modelling. *Earth Surf. Process. Landforms*, 28, 321–335
- Friend P. F. Sinha, R. 1993. Braiding and meandering parameters. dalam Best, J. L & Bristow, C S (eds). 1993. *Braided River*. Geological Society Special Publication No 75, 105-111
- Fryirs, KA., Brierley, GJ. 2013. *Geomorphic Analysis of River Systems: An Approach to Reading the Landscape, First Edition*. West Sussex: Blackwell Publishing Ltd
- Fuller, I.C., Large, A.R.G., Charlton, M.E., Heritage, G.L., and Milan, D.J., 2003, Reach-scale sediment transfers: an evaluation of two morphological budgeting approaches: *Earth Surface Processes and Landforms*, 28, 889-903
- Fuller, I.C., Large, A.R.G., Milan, D.J. 2003. Quantifying channel development and sediment transfer following chute cutoff in a wandering gravel-bed river. *Geomorphology*, 54, 307–323
- Gage, M. 1970. The Tempo of Geomorphic Change. *The Journal of Geology*, 78 (5), 619-625
- Garde, R.J. 2004. *River Morphology*. New Delhi: New Age International (P) Limited, Publishers
- Germanoski, D and Schumm S. A.. 1993. Changes in Braided River Morphology Resulting from Aggradation and Degradation. *The Journal of Geology*, 101 (4) 451-466
- Gertisser R, Charbonnier, S.J., Keller J., Quidelleur. 2012b. The geological evolution of Merapi volcano, Central Java, Indonesia. *Bull Volcanol* 74, 1213–1233
- Gertisser R, Keller J. 2003. Temporal variations in magma composition at Merapi Volcano (Central Java, Indonesia): magmatic cycles during the past 2,000 years of explosive activity. *J Volcanol Geotherm Res*, 123, 1–23
- Gertisser, R., Cassidy, N.J., Charbonnier, S.J., Nuzzo, L., Preece, K., 2012a. Overbank block and ash flow deposits and the impact of valley-derived, unconfined flows on populated areas at Merapi volcano, Java, Indonesia. *Natural Hazards*, 60, 623–648

- Global Volcanism Program, 2013. Merapi (263250) in *Volcanoes of the World*, v. 4.5.4. Venzke, E (ed.). Smithsonian Institution. Downloaded 20 Mar 2017 (<http://volcano.si.edu/volcano.cfm?vn=263250>).
<http://dx.doi.org/10.5479/si.GVP.VOTW4-2013>
- Gomez C, Janin M, Lavigne F, Gertisser R, Charbonnier S, Lahitte P, Hadmoko SR, Fort M, Wassmer P, Degroot V, Murwanto H. 2010. Borobudur, a basin under volcanic influence: 361,000 years BP to present. *J Volcanol Geotherm Res*, 196, 245–264
- Graettinger, AH. 2008. Depositional record of historic lahars in the Whangaehu Gorge, Mt. Ruapehu. *Thesis*. The University of Waikato
- Gran, K.B., Montgomery, D.R., 2005. Spatial and temporal patterns in fluvial recovery following volcanic eruptions: channel response to basin-wide sediment loading at Mount Pinatubo, Philippines. *Geol. Soc. Am. Bull.*, 117 (1–2), 195–211
- Ham, D.G., and Church, M., 2000, Bed-material transport estimated from channel morphodynamics: Chilliwack River, British Columbia: *Earth Surface Processes and Landforms*, v. 25, p. 1123-1142
- Harvey, A. 2012. *Introducing Geomorphology; A Guide to Landforms and Processes*. London: Dunedin Academic Press Ltd.
- Hayes, S.K., Montgomery, D.R., Newhall, C.G., 2002. Fluvial sediment transport and deposition following the 1991 eruption of Mt. Pinatubo. *Geomorphology*, 45, 211–224
- Hengl, T., Evans, I.S. 2009. Mathematical and Digital Models of the Land Surface. dalam Hengl, T., Reuter, H.I., *Geomorphometry; Concepts, Software, Applications*. Elsevier. Amsterdam, The Netherlands
- Heritage, G.L., Milan, D.J., Large, A.R.G., Fuller, I.C., 2009. Influence of survey strategy and interpolation model on DEM quality. *Geomorphology*, 112, 334–344
- Hoffman, D.F., and Gabet, E.J., 2007, Effects of sediment pulses on channel morphology in a gravel-bed river. *Geological Society of America Bulletin*, 119 (1/2), 116-125
- Hooke, J. 2003. River Meander Behaviour and Instability: A Framework for Analysis *Transactions of the Institute of British Geographers*, 28 (2), 238-253
- Hooke, J. M., 2004. Cutoffs galore!: occurrence and causes of multiple cutoffs on a meandering river. *Geomorphology*, 61, 225–238
- Huggett, RJ. 2011. *Fundamentals of geomorphology*. New York: Routledge's Taylor & Francis

- James, L.A., Hodgson, M.E., Ghoshal, S., and Latiolias, M.M., 2012, Geomorphic change detection using historic maps and DEM differencing: The temporal dimension of geospatial analysis: *Geomorphology*, 137, 181-198
- Janda, R.J., Daag, A.S., Delos Reyes, P.J., Newhall, C.G., Pierson, T.C., Punongbayan, R.S., Rodolfo, K.S., Solidum, R.U., Umbal, J.V., 1996. Assessment and response to lahar hazard around Mount Pinatubo, 1991 to 1993. In: Newhall, C.G., Punongbayan, R.S. (Eds.), *Fire and Mud, Eruptions and Lahars of Mount Pinatubo, Philippines*. PHIVOLCS Press, Quezon City, and University of Washington Press, Seattle, 107– 139
- Janda, R.J., Meyer, D.F., Childers, D., 1984a. Sedimentation and geomorphic changes during and following the 1980–1983 eruptions of Mount St. Helens, Washington, I. *Shin-Sabo Journal of the Erosion Control Engineering Society of Japan*, 37 (2), 10–21
- Janda, R.J., Meyer, D.F., Childers, D., 1984b. Sedimentation and geomorphic changes during and following the 1980–1983 eruptions of Mount St. Helens, Washington, II. *Shin-Sabo Journal of the Erosion Control Engineering Society of Japan* 37 (2)
- Jenkins, S., Komorowski J.-C., Baxter P.J., Spence R., Picquout A., Lavigne F., Surono. 2013. The Merapi 2010 eruption: An interdisciplinary impact assessment methodology for studying pyroclastic density current dynamics. *Journal of Volcanology and Geothermal Research*, 261, 316–329
- Jones, A.F., Brewer, P.A., Johnstone, E., and Macklin, M.G., 2007, High-resolution interpretive geomorphological mapping of river valley environments using airborne LiDAR data: *Earth Surface Processes and Landforms*, 32, 1574-1592
- Jones, R., Manville, V., Andrade, D. 2015. Probabilistic analysis of rain-triggered lahar initiation at Tungurahua volcano. *Bull Volcanol.*) 77, 68
- Kleinhans, M.G., Ferguson, R. I., Lane, S. N., Hardy, R. J., 2013. Splitting rivers at Klingseisen B, Metternicht G, Paulus G. 2008. Geomorphometric Landscape Analysis Using a Semi-automated GIS-approach. *Environmental Modelling & Software* 23, 109-121
- Knighton AD. 1999. Downstream variation in stream power. *Geomorphology*, 29, 293–306
- Knighton, A.D., 1989, River adjustment to changes in sediment load: The effects of tin mining on the Ringarooma River, Tasmania, 1875–1984: *Earth Surface Processes and Landforms*, 14 (4), 333–359
- Kodama, Y. 1994. Downstream changes in the lithology and grain size of fluvial gravels, the Watarase River, Japan: Evidence of the role of erosion in downstream fining, *J. Sediment. Res., Sect. A*, 64, 68–75

- Komorowski, J.C., Jenkins, S., Baxter, P., Picquout, A., Lavigne, F., Charbonnier, S., Gertisser, R., Preece, K., Cholikh, N., Budi-Santoso, A., Surono, 2013. Paroxysmal dome explosion during the Merapi 2010 eruption: processes and facies relationships of associated high-energy pyroclastic density currents. *Journal of Volcanology and Geothermal Research*, 261, 260–294
- Kondolf, G.M., Lisle, T.E., Wolman, G.M. 2003. Bed Sediment Measurement. Dalam Kondolf, G.M., Piegay, H. *Tools in Fluvial Geomorphology*. West Sussex: John Wiley and Sons, Ltd
- Lane, S. N., P. E. Widdison, R. E. Thomas, P. J. Ashworth, J. L. Best, I. A. Lunt, G. H. Sambrook-Smith, and C. J. Simpson. 2010. Quantification of braided river channel change using archival digital image analysis, *Earth Surf. Processes Landforms*, 35, 971–985
- Lane, S.N., 2000, The measurement of river channel morphology using digital photogrammetry: *Photogrammetric Record*, 16 (96), 937-961
- Lane, S.N., Westaway, R.M., Hicks, D.M., 2003. Estimation of erosion and deposition volumes in a large, gravel-bed, braided river using synoptic remote sensing. *Earth Surf. Process. Landf.* 28 (3), 249–271
- Lavigne F. and Thouret J.-C., 2002. Sediment transportation and deposition by rain-triggered lahars at Merapi volcano, Central Java, Indonesia. *Geomorphology*, 49, 45-69
- Lavigne, F. 1999. Lahar hazard micro-zonation and risk assessment in Yogyakarta city, Indonesia. *GeoJournal* 49, 173–183
- Lavigne, F. 2004. Rate of sediment yield following small-scale volcanic eruptions: a quantitative assessment at the Merapi and Semeru Stratovolcanoes, Java, Indonesia. *Earth Surf. Process. Landforms* 29, 1045–1058
- Lavigne, F., Thouret, J.C., Voight, B., Suwa, H., Sumaryono, A., 2000. Lahars at Merapi volcano, Central Java: an overview. *Journal of Volcanology and Geothermal Research* 100, 423–456
- Leopold, L.B., Wolman, M.G., 1957. *River Channel Patterns; Braided, Meandering and Straight*. Prof. Pap. 282-B. U.S. Geological Survey, Washington, DC
- Leopold, L.B., Wolman, M.G., Miller, J.P. 1995. *Fluvial Processes in Geomorphology*. New York: Dover Publications, Inc
- Li, Z., Q. Zhu, and C. Gold, 2005, *Digital Terrain Modeling: Principles and Methodology*. CRC PRESS, Florida
- Lisle, T.E., 2008, The evolution of sediment waves influenced by varying transport capacity in heterogeneous rivers, in Habersack, H., Piégay H.,

- and Rinaldi, M., eds., *Gravel-bed rivers VI—From process understanding to river restoration*: Amsterdam, The Netherlands, Elsevier, 443–469
- Lisle, T.E., 2010, The evolution of sediment waves influenced by varying transport capacity in heterogeneous rivers, in *Gravel-bed Rivers VI: From Process Understanding to River Restoration*, Habersack, H., Piegay, H., and Rinaldi, M., eds., Elsevier, 443-469
- Lockwood, J P. and Hazlett, R.W. 2010. *Volcanoes: Global Perspectives*. Oxford: John Wiley & Sons Ltd
- Macklin MG, Passmore DG, Newson MD. 1998. Controls of short and long term river instability: processes and patterns in gravel-bed rivers, the Tyne basin, Northern England. In *Gravel Bed Rivers in the Environment*, Klingemann PE, Beschta RL, Bradley J, Komar PD (eds). Water Resources: Highlands Ranch, CO; 257–278
- Madej, M.A. 2001. Development of channel organization and roughness following sediment pulses in single-thread, gravel bed rivers. *Water Resources Research*, 37(8), 2259-2272
- Madej, M.A., and Ozaki, V., 1996, Channel response to sediment wave propagation and movement, Redwood Creek, California, USA: *Earth Surface Processes and Landforms*, 21, 911-927
- Madej, M.A., Sutherland, D.G., Lisle, T.E., and Pryor, B., 2009, Channel responses to varying sediment input—A flume experiment modeled after Redwood Creek, California: *Geomorphology*, 103 (4), 507–519
- Major, J.J., and Mark, L.E., 2006, Peak flow responses to landscape disturbances caused by the cataclysmic 1980 eruption of Mount St. Helens, Washington: *Geological Society of America Bulletin*, 118, 938-958,
- Major, J.J., Janda, R.J., Daag, A.S., 1996. Watershed disturbance and lahars on the east side of Mount Pinatubo during the mid-June 1991 eruptions. In: Newhall, C.G., Punongbayan, R.S. (Eds.), *Fire and Mud, Eruptions and Lahars of Mount Pinatubo, Philippines*. PHIVOLCS Press, Quezon City, and University of Washington Press, Seattle, 895–920
- Major, J.J., Pierson, T.C., Dinehart, R.L., Costa, J.E., 2000. Sediment yield following severe volcanic disturbance—a two-decade perspective from Mount St. Helens. *Geology*, 28 (9), 819–822
- Mangelsdorf J., Scheurmann K., Weiss, F.. 1990. *River Morphology: A Guide for Geoscientists and Engineers*. Berlin: Springer-Verlag Heidelberg.
- Marti, J dan Ernst, G. 2005. *Volcanoes and the Environment*. Cambridge: Cambridge University Press

- Martin, Y., and Church, M., 1995, Bed-material transport estimated from channel surveys, Vedder River, British Columbia: *Earth Surface Processes and Landforms*, 20, 347-361
- McKean, J., Nagel, D., Tonina, D., Bailey, P., Wright, C.W., Bohn, C., Nayegandhi, A., 2009. Remote sensing of channels and riparian zones with a narrow-beam aquatic-terrestrial lidar. *Remote Sensing*, 1, 1065-1096
- Mertes LAK. 2002. Remote sensing of riverine landscapes. *Freshwater Biology* 47, 799–816
- Meyer, DF., Martinson, H. 1989. Rates and processes of channel development and recovery following the 1980 eruption of Mount St. Helens, Washington, *Hydrological Sciences Journal*, 34 (2), 115-127
- Milan, D.J., Heritage, G.L., Hetherington, D., 2007. Application of a 3D laser scanner in the assessment of erosion and deposition volumes and channel change in a proglacial river. *Earth Surf. Process. Landf.* 32, 1657–1674
- Milan, D.J., Heritage, G.L., Large, A.R.G., and Fuller, I.C., 2011, Filtering spatial error from DEMs: Implications for morphological change estimation: *Geomorphology*, 125, 160-171
- Miller, D.J., and Benda, L.E., 2000, Effects of punctuated sediment supply on valley-floor landforms and sediment transport: *Geological Society of American Bulliten*, 112, 1814-1824
- Milliman, J.D., and Syvitski, J.P.M., 1992, Geomorphic/tectonic control of sediment discharge to the ocean; the importance of small mountainous rivers: *Journal of Geology*, 100, 525–544
- Montgomery, D. R., and J. M. Buffington. 1997. Channel-reach morphology in mountain drainage basins, *Geol. Soc. Am. Bull.*, 109, 596– 611
- Montgomery, D. R., and J. M. Buffington. 1998. Channel processes, classification, and response, in *River Ecology and Management*, edited by R. Naiman and R. Bilby, pp. 13–42, Springer, New York
- Moore, I., Grayson, R., Ladson, A., 1991. Digital terrain modelling: a review of hydrological, geomorphological, and biological applications. *Hydrological Processes*, 5 (1), 3-30
- Moretto, J. Rigona, E., Mao, L., Delai, F., Picco, L. Lenzi, M.A. 2014. Short-term geomorphic analysis in a disturbed fluvial environment by fusion of LiDAR, colour bathymetry and dGPS surveys. *Catena*, 122, 180–195
- Muñoz-Salinas E., Manea V.C., Palacios D., Castillo-Rodriguez M. 2007. Estimation of lahar flow velocity on Popocatepetl volcano (Mexico). *Geomorphology*, 92, 91–99

- Mutaali, L. 2005. Potensi pengembangan wilayah dan kaitannya dengan tata ruang di kawasan lereng Merapi Propinsi Daerah Istimewa Yogyakarta. *Majalah Geografi Indonesia*. 19, 63-88
- Nelson A., Reuter H.I. and Gessler, P. 2009. DEM Production Methods and Sources. dalam Hengl, T., Reuter, H.I., *Geomorphometry; Concepts, Software, Applications*. Elsevier. Amsterdam, The Netherlands
- Newhall, C.G., Bronto, S., Alloway, B., Banks, N.G., Bahar, I., del Marmold, M.A., Hadisantono, R.D., Holcomb, R.T., McGeehin, J., Miksic, J.N., Rubin, M., Sayudi, S.D., Sukhyar, R., Andreastuti, S., Tilling, R.I., Torley, R., Trimble, D., Wirakusumah, A.D., (2000). 10,000 Years of explosive eruptions of Merapi Volcano, Central Java: archaeological and modern implications, *Journal of Volcanology and Geothermal Research*, 100, 9–503
- Nicoll T.J., Hickin E.J. 2010. Planform geometry and channel migration of confined meandering rivers on the Canadian prairies. *Geomorphology*, 116, 37–47
- Notebaert, B., Verstraeten, G., Govers, G., and Poesen, J., 2008, Qualitative and quantitative applications of LiDAR imagery in fluvial geomorphology: *Earth Surface Processes and Landforms*, 34, 217-231
- Olaya V. 2009. Basic Land-Surface Parameters. dalam Hengl, T., Reuter, H.I., *Geomorphometry; Concepts, Software, Applications*. Elsevier. Amsterdam, The Netherlands
- Palacios, D., Zamorano, J.J., Gomez, A. 2001. The impact of present lahars on the geomorphologic evolution of proglacial gorges: Popocatepetl, Mexico. *Geomorphology*, 37, 15–42
- Pallister, J.C., Schneider, D.J., Griswold, J.P., Keeler, R.H., Burton, W.C., Noyles, C., Newhall, C.G., Ratdomopurbo, A. 2013. Merapi 2010 eruption—Chronology and extrusion rates monitored with satellite radar and used in eruption forecasting. *Journal of Volcanology and Geothermal Research*, 261, 144–152
- Paola C, Parker G, Seal R, Sinha, S.K., Southard, J.B., and Wilcock, P.R., 1992, Downstream fining by selective deposition in a laboratory flume: *Science*, 258 (5089), 1757-1760
- Passalacqua P, Do Trung T, Fofoula-Georgiou E, Sapiro G, Dietrich WE .2010a. A geometric framework for channel network extraction from lidar: nonlinear diffusion and geodesic paths. *J Geophys Res* 115, F01002
- Passalacqua P, Tarolli P, Fofoula-Georgiou E.2010b. Testing space-scale methodologies for automatic geomorphic feature extraction from LiDAR in a complex mountainous landscape. *Water Resources Research* 46, W11535

- Pazzaglia, F.J., Gardner, T., Merritts, D.J. 1998. Bedrock Fluvial Incision and Longitudinal Profile Development Over Geologic Time Scales Determined by Fluvial Terraces. dalam Tinkler K.J. Wohl, E. dalam *Rivers over rock: fluvial processes in Bedrock channels*. Washington: American Geophysical Union
- Picco, L., Mao, L., Cavalli, M., Buzzi, E., Rainato, R., and Lenzi, M.A., 2013, Evaluating short-term morphologic changes in a gravel-bed braided river using terrestrial laser scanner: *Geomorphology*, 201, 323-334
- Piégay H, Darby SE, Mosselman E, Surian N. 2005. A review of techniques available for delimiting the erodible river corridor: a sustainable approach to managing bank erosion. *River Research and Applications*, 21, 773-789
- Pierson TC 1998. An empirical method for estimating travel times for wet volcanic mass flows. *Bulletin of Volcanology*, 60, 98-109
- Pierson, T.C., Daag, A.S., Delos Reyes, P.J., Regalado, M.T.M., Solidum, R.U., Tubianosa, B.S., 1996. Flow and deposition of posteruption hot lahars on the east side of Mount Pinatubo, July –October 1991. In: Newhall, C.G., Punongbayan, R.S. (Eds.), *Fire and Mud, Eruptions and Lahars of Mount Pinatubo, Philippines*. PHIVOLCS Press, Quezon City, and University of Washington Press, Seattle, 921-950
- Pierson, T.C., Pringle, P.T., and Cameron, K.A., 2011, Magnitude and timing of downstream channel aggradation and degradation in response to a dome-building eruption at Mount Hood, Oregon: *Geological Society of America Bulletin*, 123(1-2), 3-20
- Pierson, TC., Major, J.J. 2014. Hydrogeomorphic Effects of Explosive Volcanic Eruptions on Drainage Basins. *Annu. Rev. Earth Planet. Sci.* 42, 469-507
- Pierson, TC., Scott, KM. 1985. Downstream Dilution of a Lahar' Transition From Debris Flow to Hyperconcentrated Streamflow. *Water Resources Research*, 21 (10), 1511-1524
- Pike R.J., Evans, I.S., Hengl, T. 2009. *Geomorphometry: A Brief Guide* dalam Hengl, T., Reuter, H.I., *Geomorphometry; Concepts, Software, Applications*. Elsevier. Amsterdam, The Netherlands
- Pike, R.J., 2000. Geomorphometry — diversity in quantitative surface analysis. *Progress in Physical Geography*, 24, 1-20
- Pirotti, F., Tarolli, P. 2010. Suitability of LiDAR point density and derived landform curvature maps for channel network extraction. *Hydrol. Process.*, 24, 1187-1197
- Procter, J., Cronin, S.J., Fuller, I.C., Lube, G., Manville, V., 2010. Quantifying the geomorphic impacts of a lake-breakout lahar, Mount Ruapehu, New Zealand. *Geology*, 38, 67-70

- Rădoane M, Rădoane N, Dumitriu D, Miclaus C. 2007. Downstream variation in bed sediment size along the East Carpathian rivers: evidence of the role of sediment sources. *Earth Surf. Process. Landforms*, 33, 674–694
- Rathburn, S.L., and Wohl, E.E., 2003, Predicting fine sediment dynamics along a pool-riffle mountain channel: *Geomorphology*, 55, 111-124
- Rathburn, S.L., Rubin, Z.K., and Wohl, E.E., 2013, Evaluating channel response to an extreme sedimentation event in the context of historical range of variability: Upper Colorado River, USA: *Earth Surface Processes and Landforms*, 38, 391-406
- Roche, O., Phillips, J.C., Kelfoun, K. 2013. Pyroclastic density currents. dalam Fagents S.A., Gregg, T.K.P., Lopes, R.M.C. 2013. *Modeling Volcanic Processes; The Physics and Mathematics of Volcanism*. New York: Cambridge University Press
- Rodolfo, K.S., Umbal, J.V., Alonso, R.A., Remotigue, C.T., Paladio-Melosantos, M.L., Salvador, J.H., Evangelista, D., and Miller, Y., 1996, Two years of lahars on the western flank of Mount Pinatubo: Initiation, flow processes, deposits, and attendant geomorphic and hydraulic changes, in Newhall, C.G., and Punongbayan, R.S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Quezon City, Philippine Institute of Volcanology and Seismology, and Seattle, University of Washington Press*, 989–1013
- Rumsby, B.T., Brasington, J., Langham, J.S., McLelland, S.J., Middleton, R., and Rollinson, G., 2008, Monitoring and modeling particle and reach-scale morphological change in gravel-bed rivers: Applications and challenges: *Geomorphology*, 93, 40-54
- Santosa, L.W., Sutikno. 2006. Geomorphological approach for regional zoning in the Merapi volcanic area. *Indo.J. Geog.* 38, 53-68
- Saucedo, R., Macias, J.L., Sarocchi, D., Bursik, M.I., Rupp, B., 2008. The rain-triggered Atenuique volcaniclastic debris flow of October 16, 1955 at Nevado de Colima Volcano, Mexico. *Journal of Volcanology and Geothermal Research*, 132 (1–2), 69–83
- Schumm, S.A., 1973, Geomorphic thresholds and complex response of drainage systems in Morisawa, M., ed., *Fluvial geomorphology: SUNY Binghamton Publications in Geomorphology*, 299-310
- Scott, K.M., Janda, R.J., de la Cruz, E.G., Gabinete, E., Eto, I., Isada, M., Sexton, M., Hadley, K.C., 1996. Channel and sedimentation responses to large volumes of 1991 volcanic deposits on the east flank of Mount Pinatubo. In: Newhall, C.G., Punongbayan, R.S. (Eds.), *Fire and Mud, Eruptions and Lahars of Mount Pinatubo, Philippines*. PHIVOLCS Press, Quezon City, and University of Washington Press, Seattle, pp. 971– 988

- Seal R and Paola c. 1995. Observations of downstream fining on the North Fork Toutle River near Mount St. Helens, Washington. *WATER RESOURCES RESEARCH*, 31 (5), 1409-1419
- Sear, D., Newson, M.D., Thorne, CR. 2003. *Guidebook of Applied Fluvial Geomorphology*; R&D Technical Report FD1914. London. Defra/Environment Agency
- Shary, PA. 2008. Models of Topography. dalam Zhou Q., Lees B., Tang, G. (Eds.) *Advances in Digital Terrain Analysis*. Berlin: Springer-Verlag
- Simon A, Rinaldi M. 2006. Disturbance, stream incision, and channel evolution: The roles of excess transport capacity and boundary materials in controlling channel response. *Geomorphology*, 79, 361–383
- Simon, A. 1992. Energy, time, and channel evolution in catastrophically disturbed fluvial systems. *Geomorphology*, 5, 345-372
- Singer, M. B. 2008. Downstream patterns of bed material grain size in a large, lowland alluvial river subject to low sediment supply, *Water Resour. Res.*, 44, W12202
- Slaymaker, O. 2009. The future of geomorphology. *Geography Compass*, 3, 329–49
- Slaymaker, O., Spencer, T., Dadson, S. 2009. Landscape and landscape-scale processes as the unfilled niche in the global environmental change debate: an introduction. dalam Slaymaker, O., Spencer, T., Embleton-Hamman, C. 2009. *Geomorphology and Global Environmental Change*. Cambridge: Cambridge University Press
- Snyder, N. P. 2009. Studying stream morphology with airborne laser elevation data, *Eos Trans. AGU*, 90(6), 45–46
- Soewarno. 2013. *Hidrometri dan Aplikasi Teknosabo dalam Pengelolaan Sumber Daya Air: Seri Hidrologi*. Yogyakarta; Graha Ilmu
- Sofia G, Tarolli P, Cazorzi F, Dalla Fontana G. 2011. An objective approach for feature extraction: distribution analysis and statistical descriptors for scale choice and channel network identification. *Hydrology and Earth System Sciences*, 15, 1387–1402
- Sofia, G., Dalla Fontana, G., Tarolli, P., 2014. High-resolution topography and anthropogenic feature extraction: testing geomorphometric parameters in floodplains. *Hydrol. Process.* 28, 2046–2061
- Sukatja, CB., Sudibyakto, Voskuil, RPGA. 2014. Urban risk assessment of lahar flows in Merpai Volcano (Study Case: Muntilan urban area, Central Java). *Indo.J. Geog.* 46, 62-68
- Summerfield, M.A. 1991. *Global Geomorphology; An Introduction to the Study of Landform*. Harlow, Essex: Longman

- Sundborg, A ., 1956. The river Klaralven: a study of fluvial processes. *Geogr. Ann.* 38A, 127–316
- Surono, Jousset, P., Pallister, J., Boichu, M., Buongiorno, M.F., Budisantoso, A., Costa, F., Andreastuti, S., Prata, F., Schneider, D., Clarisse, L., Humaida, H., Sumarti, S., Bignami, C., Griswold, J., Carn, S., Oppenheimer, C., Lavigne, F., 2012. The 2010 explosive eruption of Java's Merapi volcano — a ‘100-year’ event. *Journal of Volcanology and Geothermal Research* 241–242, 121–135.
- Takahashi, T., 1994. Prediction of debris flow hydrograph at the Bebeng River, Merapi volcano. In: *Japan–Indonesia Joint Research on Natural Hazard Prediction and Mitigation*. Disaster Prevention Research Inst., Kyoto University, 100–113
- Tanarro ,L.M., Andrés, N, Zamorano, J.J. Palacios D. , Renschler, C.S. 2010. Geomorphological evolution of a fluvial channel after primary lahar deposition: Huiloac Gorge, Popocatepetl volcano (Mexico). *Geomorphology*, 122, 178–190
- Tarolli, P., Sofia, G., Dalla Fontana, G., 2012. Geomorphic features extraction from high-resolution topography: landslide crowns and bank erosion. *Nat. Hazards*, 61, 65–83
- Tayefi, V., Lane, S., Hardy, R., and Yu, D. 2007. ‘A comparison of one- and two-dimensional approaches to modeling flood inundation over complex upland floodplains’, *Hydrological Processes*, 21, 3190–3202
- Temme, A.J.A.M., Heuvelink, G.B.M., Schoorl J.M., Claessens, L. 2009. Geostatistical Simulation and Error Propagation in Geomorphometry. dalam Hengl, T., Reuter, H.I., *Geomorphometry; Concepts, Software, Applications*. Elsevier. Amsterdam, The Netherlands
- Theule JI, Liébault F, Loye A, Laigle D, Jaboyedoff M. 2012. Sediment budget monitoring of debris-flow and bedload transport in the Manival Torrent, SE France. *Nat Hazards Earth Syst Sci*, 12, 731–749
- Thoma DP, Gupta SC, Bauer ME, Kirchoff CE. 2005. Airborne laser scanning for riverbank erosion assessment. *Remote Sensing of the Environment*, 95(4): 493–501
- Thornbury, W.D.,1954. *Principles of Geomorphology*. New York, John Wiley and Sons, Inc.,618p
- Thouret, J.-C., Gupta, A., Lube, G., Liew, S.C., Cronin, S.J., Surono, 2010. The 2006 pyroclastic deposits of Merapi Volcano, Java, Indonesia: High-spatial resolution IKONOS images and complementary ground based observations. *Remote Sensing of Environment*, 114 (9), 1949–1967

- Thouret, J.C., Lavigne, F., Kelfoun, K., Bronto, S. 2000. Toward a revised hazard assessment at Merapi volcano, Central Java. *J. Volcanol. Geotherm. Res.* 100, 479–502
- Thouret, J.C., Oehler, J.F., Gupta, A., Solikhin, A., Procter, J.N. 2014. Erosion and aggradation on persistently active volcanoes—a case study from Semeru Volcano, Indonesia. *Bull Volcanol.* 76, 857
- Toone J., Rice S.P., Piégay H. 2014. Spatial discontinuity and temporal evolution of channel morphology along a mixed bedrock-alluvial river, upper Drôme River, southeast France: Contingent responses to external and internal controls. *Geomorphology.* 205, 5–16
- Valentine E. M., Ikeda S., Knight D. W., McEwan I. K., Myers W. R. C., Pender G., Tsujimoto T., Willetts B. B. and Wormleaton P. R. Sediment Processes. Dalam McEwan I. Ikeda S..2009. *Flow and Sediment Transport in Compound Channel : The Experiences of Japanese and UK Research.* Boca Raton. CRC Press
- Vallance JW, Iverson Rm. 2015. Lahars and Their Deposits in Sigurdsson (Ed.) The Encyclopedia of Volcanoes Second Edition. San Diego: Academic Press Elsevier
- Vallance, J. W., 2005. Volcanic debris flows. In Jakob, M., and Hungr, O. (eds.), *Debris-Flow Hazards and Related Phenomena.* Berlin: Springer
- Van Padang, M. N. 1983. History of the volcanology in the former Netherlands East Indies. *Scripta Geol.* 71
- Voight B, Constantine EK, Siswamidjyo S, Torley R 2000. Historical eruptions of Merapi volcano, Central Java, Indonesia, 1768–1998. *J Volcanol Geotherm Res,* 100, 69–138.
- Wheaton JM. 2008. Uncertainty in Morphological Sediment Budgeting of Rivers. *Unpublished PhD Thesis,* University of Southampton, Southampton, 412 pp.
- Wheaton, J.M., Brasington, J., Darby, S.E., Kasprak, A., Sear, D.A., Vericat, D. 2013. Morphodynamic signatures of braiding mechanisms as expressed through change in sediment storage in a gravel-bed river. *Journal of Geophysical Research: Earth Surface,* 118, 759–779
- Wheaton, J.M., Brasington, J., Darby, S.E., Sear, D.A., 2010. Accounting for uncertainty in DEMs from repeat topographic surveys: improved sediment budgets. *Earth Surf. Process. Landf.,* 35, 136–156
- Wilson, J.P., and Gallant, J.C. editors, 2000, *Terrain Analysis: Principles and Applications* (Chichester: Wiley).
- Wohl, E., 2010. *Mountain rivers revisited.* Washington: American Geophysical Union.

- Wolman, M. G. 1954. A method of sampling coarse river-bed material, *Eos Trans. AGU*, 35, 951–956
- Wolman, M.G., 1955. The natural channel of Brandywine Creek, Pennsylvania. *U.S. Geol. Surv. Prof. Pap.*, 271
- Xu J .1999. Erosion caused by hyperconcentrated flow on the Loess Plateau of China. *Catena*, 36,1–19
- Zheng, S., Wu B, Thorne TR, Simon, A. 2014. Morphological evolution of the North Fork Toutle River following the eruption of Mount St. Helens, Washington. *Geomorphology*, 208, 102-116