



DAFTAR PUSTAKA

- Acyntyacunyata Speleological Club (ASC). (2014). Gombong Speleology Expedition. *Laporan Ekspedisi*. Yogyakarta: ASC.
- Adji, T. N. (2010). Kondisi daerah tangkapan Sungai Bawah Tanah Karst Gunungsewu dan kemungkinan dampak lingkungannya terhadap Sumberdaya Air (Hidrologis) karena aktivitas manusia. In *Seminar Pelestarian Sumberdaya Airtanah Kawasan Karst Gunungkidul. UGK BP DAS SOP*.
- Agniy, R.F. (2019). Pengelolaan Sumberdaya Air Berdasarkan Sifat Akuifer Karst di Kawasan Karst Jonggrangan. *Thesis*. Yogyakarta: Universitas Gadjah Mada.
- Agniy, R.F. (2016). Kajian Hidrogeologi Karst Sistem Gua Pindul, Kecamatan Karangmojo, Kabupaten Gunungkidul. *Skripsi*. Yogyakarta: Universitas Gadjah Mada.
- Agniy, R. F., Adji, T. N., Cahyadi, A., Nurkholis, A., & Haryono, E. (2019a). Characterizing the cavities of Anjani Cave in Jonggrangan Karst Area, Purworejo, Central Java, Indonesia. In *IOP Conference Series: Earth and Environmental Science* (Vol. 256, No. 1, p. 012009). IOP Publishing.
- Agniy, R. F., Septianingrum, R. S., Adinugraha, A. S., Alghozali, Q., Aditya, B., Cahyadi, A., & Adji, T. N. (2019b). Analysis of Cavities Characteristics in the Semar-Kiskendo Caves System, Jonggrangan Karst Area, Kulon Progo, Indonesia. In *E3S Web of Conferences* (Vol. 125, p. 01016). EDP Sciences.
- Agniy, R. F., Cahyadi, A., & Nurkholis, A. (2017). Analisis karakteristik akuifer karst dengan uji perunutan dan pemetaan gua. <https://doi.org/10.31219/osf.io/dfxjh>
- Agniy, R. F., dan Cahyadi, A. (2015). Analisis Evolusi Hidrogeokimia Airtanah di Sebagian Mataair Karst Kabupaten Rembang Bagian Selatan. In *Prosiding Seminar Nasional Innovation in Environmental Management. Semarang: Program Pascasarjana Universitas Diponegoro*.
- Aini, H. N., Syafri, I., & Patonah, A. (2019). Provenance Batupasir dan Batulempung Anggota Tuf Formasi Waturandra, Daerah Kebumen, Jawa Tengah. *Geoscience Journal*, 3(4), 271-280.
- Asdak, C. (2007). *Hidrologi dan Pengelolaan Daerah Aliran Sungai*. Yogyakarta: Universitas Gadjah Mada Press.
- Asikin, S. (1992). *Geologi Struktur Indonesia*. Bandung: ITB Press.



- Asikin, S., Handoyo, A., Prastistho, B., dan Gafoer, S., (1992). *Geologi Lembar Banyumas, Jawa. 1308-3*. Bandung: Departemen Pertambangan dan Energi Direktorat Jendral Geologi dan Sumberdaya Mineral.
- Bakalowicz, M. (2005). Karst groundwater: a challenge for new resources. *Hydrogeology Journal*, 13(1), 148-160.
- Banyumas Asik Caving (BAC). 2012. Inventarisasi Gua Kawasan Karst Gombong Selatan. Laporan. Purwokerto: BAC.
- Barberá, J. A., Mudarra, M., Andreo, B., & De la Torre, B. (2018). Regional-scale analysis of karst underground flow deduced from tracing experiments: examples from carbonate aquifers in Malaga province, southern Spain. *Hydrogeology journal*, 26(1), 23-40.
- Bemmelen, R. Van. (1949). *The Geology of Indonesia Vol. IA*. The Hauge: Government Printing Office
- Benischke, R., Goldscheider, N. dan Smart, C. (2007). *Tracer Techniques*. dalam Goldscheider, N. dan Drew, D. (2007). *Methods in Karst Hydrogeology*. London: Taylor & Francis Group
- Bernard, L., Josiane, L., Locatelli, C., Robert, G., Setiawan, R., Sitepu, I., Winarto, F.E.A., & Saputra, A. W. (2003). *Expédition Spéléologique Sur Le Karst de Karangbolong (Java, Indonésie)*. Fédération Française de Spéléologie, Report Number: 61.
- Blair, R.W. (2008). Karst Landforms and Lakes, National Aeronautics and Space Administration, http://disc.sci.gsfc.nasa.gov/geomorphology/GEO_7
- Bogli, A. (1980). *Karst Hydrology and Physical Speleology*. Berlin: Springer-Verlag.
- Bonacci, O., & Andrić, I. (2015). Karst spring catchment: an example from Dinaric karst. *Environmental Earth Sciences*, 74(7), 6211-6223.
- Bonacci, O., Jukić, D., & Ljubenkov, I. (2006). Definition of catchment area in karst: case of the rivers Krčić and Krka, Croatia. *Hydrological sciences journal*, 51(4), 682-699.
- Brahmantyo, B. (2005). Perkembangan Bentangalam Karst Gombong Selatan, dengan Geologi sebagai Faktor Kendali. *Disertasi*. Bandung: Institut Teknologi Bandung.
- Cahyadi, A. (2010). Pengelolaan Kawasan Karst dan Peranannya dalam Siklus Karbon di Indonesia. <https://doi.org/10.31227/osf.io/8gh6d>



Climate Engine. (2021). Desert Research Institute and University of Idaho. Diakses pada 20 Februari 2021. <http://climateengine.org>.

Davie, T. (2008). *Fundamentals of Hydrology*. Abingdon, Oxon: Routledge.

Dinas Permukiman dan Lingkungan Hidup Kab. Kebumen. 2017. Studi Mataair di Kabupaten Kebumen. Kebumen: DisperkimLH.

Domenico, P.A. dan Schwartz, F. W. (1998). *Physic and Chemical Hydrogeology*. New York: John Wiley & Sons.

Doorenbos, J. & Pruitt, W. O. (1977) Crop water requirements. Revised 1977. FAO *Irrigation and Drainage Paper 24* hal 144

Ender, A., Goeppert, N., & Goldscheider, N. (2018). Spatial resolution of transport parameters in a subtropical karst conduit system during dry and wet seasons. *Hydrogeology Journal*, 26(7), 2241-2255.

Field, M. S. (2002a). *The QTRACER2 program for tracer-breakthrough curve analysis for tracer tests in karstic aquifers and other hydrologic systems*. National Center for Environmental Assessment--Washington Office, Office of Research and Development, US Environmental Protection Agency.

Field, M.S. (2002b). *A Lexicon of Cave and Karst Terminology with Special Reference to Environmental Karst Hydrology*. United States Environmental Protection Agency, Washington, 214 p.

Ford, D.C., dan Williams, P.W. (2007). *Karst Geomorphology and Hydrology*. London: Chapman and Hall.

Ford, D. C., & Williams, P. W. (1989). *Karst geomorphology and hydrology*. London: Unwin Hyman.

Gabrovšek, F., Kogovšek, J., Kovačič, G., Petrič, M., Ravbar, N., & Turk, J. (2010). Recent results of *tracer* tests in the catchment of the Unica River (SW Slovenia). *Acta carsologica*, 39(1).

Gilli, E. 2015. *Karstology Karst, Caves and Spring*. London: CRC Press Taylor & Francis Group.

Gillieson. 1996. *Caves : Processes, Development, and Management*. Oxford: Blackwell Publishers.

Goldscheider, N., Meiman, J., Pronk, M., & Smart, C. (2008). *Tracer* tests in karst hydrogeology and speleology. *International Journal of speleology*, 37(1), 27-40.



- Goldscheider, N., Drew, D., dan Worthington, S. (2007). *Introduction*. dalam Goldscheider, N. dan Drew, D. (2007). *Methods in Karst Hydrogeology*. London: Taylor & Francis Group
- Haryono, E., & Adjii, T. N. (2004). *Geomorfologi dan Hidrologi Karst*. Kelompok Studi Karst, Fakultas Geografi, Universitas Gadjah Mada.
- Haryono, E., Putro, S. T., Suratman, dan Sutikno. (2017). Polygonal Karst Morphology Of Karangbolong Area, Java-Indonesia. *Acta Carsologica*, 46(1), 63–72.
- Haryono, E., Yulianto, B., Putro, S. T., dan Nucifera, F. (2013). Studi Hidrogeologi Kawasan Karst Karangbolong. *Laporan Penelitian*. Tidak dipublikasikan.
- Hauns, M. (2000). Modeling *tracer* and particle transport under turbulent flow conditions in karst conduit structures. *Thesis*, Université de Neuchatel: Freiburger Schriften Zur Hydrologie
- Hauns, M., Jeannin, P. Y., & Atteia, O. (2001). Dispersion, retardation and scale effect in *tracer* breakthrough curves in karst conduits. *Journal of hydrology*, 241(3-4), 177-193.
- Huggett, R. J. (2011). *Fundamentals of Geomorphology*. Abingdon, Oxon: Routledge.
- Ikatan Mahasiswa Pencinta Alam (Impala) Universitas Brawijaya. 2013. Laporan Ekspedisi Gua dan Karst Nusantara: Malang-Tulunggagung-Tuban-KebumenPulau Seram. Malang: Impala UB
- Junursyah, G. M. L., Suteja, A., & Setyana, B. (2019). Survei Geomagnet Untuk Mendeliniasi Cekungan Sedimen yang Tertutupi Batuan Vulkanik di Daerah Banyumas dan Sekitarnya. dalam Permana, A. K., Pangabean, H., Maryanto, S., & Hermiyanto, M. H. (2019). Eksplorasi Hidrokarbon di Sistem Vulkanik. *Publikasi Khusus 2019*. Bandung: Pusat Survei Geologi.
- Jouves, J., Viseur, S., Arfib, B., Baudement, C., Camus, H., Collon, P., & Guglielmi, Y. (2017). Speleogenesis, geometry, and topology of caves: A quantitative study of 3D karst conduits. *Geomorphology*, 298, 86-106.
- Karimi, H. (2012). *Hydrogeology of Karstic Area*. dalam Kazemi, G.A. 2012. *Hydrogeology A Global Perspective*. Croatia: In Tech.
- Karami, G. H., Bagheri, R., & Rahimi, F. (2016). Determining the groundwater potential recharge zone and karst springs catchment area: Saldoran region, western Iran. *Hydrogeology journal*, 24(8), 1981-1992.



- Knöll, P., & Scheytt, T. (2018). A *tracer* test to determine a hydraulic connection between the Lauchert and Danube karst catchments (Swabian Alb, Germany). *Hydrogeology journal*, 26(2), 429-437.
- Kübeck, C., Maloszewski, P. J., & Benischke, R. (2013). Determination of the conduit structure in a karst aquifer based on *tracer* data—Lurbach system, Austria. *Hydrological processes*, 27(2), 225-235.
- Kusumayudha, S.B. (2005). *Hidrogeologi Karst dan Geometri Fraktal Daerah Gunungsewu*. Yogyakarta: Adicita Karya Nusa
- Laksono, G. E. (2019). Kajian Kerusakan Lingkungan Berbasis Indeks Ketergangguan Karst di Kawasan Karst Karangbolong Kabupaten Kebumen. *Tesis*. Yogyakarta: Sekolah Pascasarjana, Universitas Gadjah Mada.
- Lauber, U., Utrecht, W., & Goldscheider, N. (2014). Spatially resolved information on karst conduit flow from in-cave dye-tracing. *Hydrology & Earth System Sciences Discussions*, 10(9).
- Lestari, E. P., & M Widayastuti, M. W. (2017). Analisis Neraca Air untuk Menentukan Daerah Tangkapan Air (Dta) Sistem Pindul, Kecamatan Karangmojo, Kabupaten Gunungkidul. *Jurnal Bumi Indonesia*, 6(4).
- Massei, N., Wang, H. Q., Field, M. S., Dupont, J. P., Bakalowicz, M., & Rodet, J. (2006). Interpreting *tracer* breakthrough tailing in a conduit-dominated karstic aquifer. *Hydrogeology Journal*, 14(6), 849-858.
- Morales, T., de Valderrama, I. F., Uriarte, J. A., Antigüedad, I., & Olazar, M. (2007). Predicting travel times and transport characterization in karst conduits by analyzing *tracer*-breakthrough curves. *Journal of hydrology*, 334(1-2), 183-198.
- Palmer A.N. 1991. Origin and Morphology of Limestone Caves. *Geological Society of America Bulletin* 103, 1-21.
- Purnama, S. (2010). *Hidrologi Airtanah*. Yogyakarta: Kanisius.
- Rachmawati, A. I. (2020). Variabilitas Debit, Kapasitas Simpanan, dan Perkembangan Akuifer Karst Mataair di Sebagian Kawasan Karst Karangbolong. *Skripsi*. Yogyakarta: Universitas Gadjah Mada
- Ruswanto, Badri, I., dan Anwar, A. (2002). Inventarisasi Geologi Lingkungan Kawasan Karst Gombong, Kabupaten Kebumen, Jawa Tengah. *Laporan Proyek*. Bandung: Direktorat Tata Lingkungan Geologi dan Kawasan Pertambangan.



- Santosa, L. W., & Adji, T. N. (2014). *Karakteristik Akuifer dan Potensi Airtanah Graben Bantul*. Gadjah Mada University Press.
- Saputra, B. D. (2008). Morfometri Dolina di Wilayah Karst Gombong Selatan. *Skripsi*. Depok: Universitas Indonesia.
- Seyhan, E. (1990). *Dasar-Dasar Hidrologi*. Yogyakarta: Gadjah Mada University Press
- Smart, C. C. (1988). Artificial *tracer* techniques for the determination of the structure of conduit aquifers. *Groundwater*, 26(4), 445-453.
- Soewarno. 2000. *Hidrologi Operasional Jilid Kesatu*. Bandung: PT Citra Aditya Bakti.
- Sosrodarsono, S. dan Takeda, K. (1978). *Hidrologi Untuk Pengairan*. Jakarta: Pradnya Paramita
- Summerfield, M.A. (2013). *Global Geomorphology*. New York: Routledge.
- Tam, V. T., Trung, N. D., Ke, D. T., & Batelaan, O. (2004). Interpretation of a cave system based on *tracer* experiment, geostructure and cave development analysis. In *Trans-Karst 2004, International Transdisciplinary Conference on Development and Conservation of Karst Regions* (pp. 202-206). Research Institute of Geology and Mineral Resources (RIGMR); Hanoi, Vietnam.
- Thornburry, W.D. 1954. *Principle of Geomorphology*. New York: John Wiley and Sons, Inc.
- Tjasyono, B. 2004. *Klimatologi*. Bandung: Penerbit ITB.
- Todd, D. K., & Mays, L. W. (2005). *Groundwater Hydrology*. New York: John Wiley & Sons.
- USDA SCS (U. S. Department of Agriculture, Soil Conservation Service). (1970). Irrigation Water Requirements. *Tech Release 21* (rev.) hal 92
- van Beijnen, P. E. (2011). *Karst management*. Springer Science & Business Media.
- White, W.B., (2004). Conceptual Models for Karstic Aquifers, www.speleogenesis.info
- White, W. B. (2002). Karst hydrology: recent developments and open questions. *Engineering geology*, 65(2-3), 85-105.
- White, W.B. (1988). *Geomorphology and Hydrology of Karst Terrain*. New York: Oxford University Press.



UNIVERSITAS
GADJAH MADA

STUDI PERUNUTAN AIR (WATER TRACING) PADA BEBERAPA ALIRAN SUNGAI BAWAH TANAH DI
KAWASAN KARST
KARANGBOLONG BAGIAN BARAT, KABUPATEN KEBUMEN, JAWA TENGAH

ALPINE PRIMA P, Dr. Tjahyo Nugroho Adji, S.Si., M.Sc.Tech.

Universitas Gadjah Mada, 2021 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Widyastuti, M., Riyanto, I. A., Naufal, M., Ramadhan, F., & Rahmawati, N. (2019).

Catchment Area Analysis of Guntur Karst Spring Gunung Kidul Regency,
Java, Indonesia. In *IOP Conference Series: Earth and Environmental
Science* (Vol. 256, No. 1, p. 012008). IOP Publishing.

Widyastuti, M.; Cahyadi, A. dan Sasongko, M.H.D. 2016. *Hidrologi dan
Hidrogeologi Karst.* dalam Haryono, E. (Editor) 2016. *Pedoman Praktis
Survei Terintegrasi Kawasan Karst.* Yogyakarta: Badan Penerbit Fakultas
Geografi (BPFG) Universitas Gadjah Mada. Halaman: 20-43.