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RESEARCH

Areas: Transportation · Environmental Engineering · Global and Planetary Change · Automotive Engineering · Building and Construction · Health, Toxicology and Mutagenesis

RESEARCH SUMMARY

95	1,838	21	42	2.44	31%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 95 publications listed below, 2005–2026. Field-weighted impact is the mean over the 48 works scored for it; 1.00 is the world average for works of the same field, type and year. 15 of the 48 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Kwame Nkrumah University of Science and Technology 2016–present
Kumasi, Ghana

Monash University 2011–2016
Clayton, Australia

McMaster University 2010–2011
Hamilton, Canada

EDUCATION AND QUALIFICATIONS

PhD. Geography 2005–2010
Geography, University of Guelph, Guelph, Canada

MSc. Geography 2003–2005
Geography, Simon Fraser University, Burnaby, Canada

BSc. (Honours) Geodetic Engineering 1998–2002
Geodetic Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PUBLICATIONS

Journal articles 82

1. **Gift Dumedah**, Patrick Azong, Jesse Kwame Ahado, Umar Farouk Moro, Christian Agbozo (2026). Disparities of Electoral Violence in Ghana: Its Geographical Characterization and Socio-demographic and Political Implications. *The African Review*. https://doi.org/10.1163/1821889x-bja10171
2. Gadafi Aliu, Richard Serbeh, Emmanuel Nyaaba, Henry Mortey, George Junior Elloin, Adams Salifu, Prosper Bazangtiman Slimbil, Razak M Gyasi, **Gift Dumedah**, Kabila Abass (2026). Resilience in the face of rising flood risk: assessing severity, socio-economic effects, and responses in Buipe. *Urban Water Journal*. https://doi.org/10.1080/1573062x.2026.2648231
3. Patrick Azong, Samuel Ato Andam-Akorful, Emmanuel Nyaaba, Efiba Vidda Senkyire Kwarteng, **Gift Dumedah** (2026). Unequal heat: Urban form, land cover change, and socioeconomic vulnerability in

greater Kumasi, Ghana. *City and Environment Interactions*. https://doi.org/10.1016/j.cacint.2026.100392

4. **G Dumedah** (2025). Characterizing and Estimating Operational Cost Elements and Performance Metrics for Public Transport Modes in Sub-Saharan African Cities. *Journal of Sustainable Development*. https://www.researchgate.net/profile/Alex-Johnson-10/publication/390202083_Characterizing_and_Estimating_Operational_Cost_Elements_and_Performance_Metrics_for_Public_Transport_Modes_in_Sub-Saharan_African_Cities/links/67e63180f966c17052aaa966/Characterizing-and-Estimating-Operational-Cost-Elements-and-Performance-Metrics-for-Public-Transport-Modes-in-Sub-Saharan-African-Cities.pdf
5. **Gift Dumedah**, Samuel Akintomide Ajayi, Gilbert Edwin Belson, Benedicta Amponsah Sintim, Christian Agbozo, Benjamin Ebissah, Joycelyn Adjekum, Emmanuel Adubofour Amankwah, Keziah Adobea Otchere, Patrick Azong (2025). Estimating baseline vehicular emissions for paratransit modes in sub-Saharan African cities: insights from Accra, Ghana and Dar es Salaam, Tanzania. *African Geographical Review*. https://doi.org/10.1080/19376812.2025.2571573
6. **Gift Dumedah**, Keziah Adobea Otchere, Patrick Azong, Emmanuel Dzisi, Hannibal Bwire (2025). Evaluating perceived accessibility to workplace and shopping destinations in informal urban communities in Ghana and Tanzania. *African Transport Studies*. https://doi.org/10.1016/j.aftran.2025.100031
7. **Gift Dumedah**, Seidu Iddrisu, Gabriel Alexander Kpevu, Precious Adwoa Okyere, Patrick Azong (2025). Examining the spatial disparities of urban public transport fares in Kumasi, Ghana – Are fares consistent by route characteristics? *African Transport Studies*. https://doi.org/10.1016/j.aftran.2025.100032
8. Welbeck Oppong Adu, **Gift Dumedah** (2025). Mapping of road surface condition features for unpaved roads through the use of remotely sensed imagery from unmanned aerial vehicle. *Journal of the Ghana Institution of Engineering (JGhIE)*. https://doi.org/10.56049/jghie.v25i2.342
9. Samuel A. Ajayi, Charles A. Adams, **Gift Dumedah**, Obiora A. Nnene, Fidelma Ibili (2025). On-road vehicular traffic emissions inventory and air quality on major roadways in Lagos City. *African Transport Studies*. https://doi.org/10.1016/j.aftran.2025.100034
10. Emmanuella Adubea Asamoah, **Gift Dumedah**, Williams Ackaah, Daniel Asenso-Gyambibi, Edwin Kojo Larbi (2025). Spatial database creation and spatial analysis of road traffic crashes in the Ashanti region, Ghana. *African Transport Studies*. https://doi.org/10.1016/j.aftran.2025.100041
11. **Gift Dumedah**, Hannibal Bwire, Albert Mwauzi, Steven Jones (2025). Stakeholder insights on enhancing public transport services in sub-Saharan African cities – Perspectives from Accra-Ghana and Dar es Salaam-Tanzania. *African Transport Studies*. https://doi.org/10.1016/j.aftran.2025.100037
12. **G Dumedah** (2025). Surface condition assessment of unpaved roads through the use of unmanned aerial vehicle. *International Journal of Pavement Research and Technology*.
13. **Gift Dumedah**, Patrick Azong, Emmanuel Kofi Adanu, Precious Adwoa Okyere, Steven Jones (2025). Transport-related health, safety and accessibility in sub-Saharan Africa: Comparative insights from Kumasi-Ghana and Dar es Salaam-Tanzania. *African Transport Studies*. https://doi.org/10.1016/j.aftran.2025.100058
14. Kabila Abass, **Gift Dumedah**, Aminu Dramani, Andrews Ofosu, Lawrence Guodaar, Emmanuel Nyaaba, Alex Yao Segbefia, Kwadwo Afriyie, Hubert Bimpeh Asiedu, George Appiah, Samuel Awuni Azinga, Razak M. Gyasi (2025). 'We live in fear and face endless physical and emotional health problems': Perceived health implications of floods among urban households in Ghana. *Geographical Journal*. https://doi.org/10.1111/geoj.70036
15. **Gift Dumedah**, Hannibal Bwire, Steven Jones, Albert Mwauzi (2024). Disparities of potential and perceived access to socioeconomic activities in informal urban communities in Kumasi-Ghana and Dar es Salaam-Tanzania. *Urban Planning and Transport Research*. https://doi.org/10.1080/21650020.2024.2345089
16. **Gift Dumedah**, Seidu Iddrisu, Gabriel Alexander Kpevu, George Dakurah, Charles Anum Adams (2024). Do informal urban communities in Ghana qualify as a 15-Minute City based on access to socioeconomic activities? *African Geographical Review*. https://doi.org/10.1080/19376812.2024.2325085
17. Samuel Akintomide Ajayi, Charles Anum Adams, **Gift Dumedah**, O. Atinuke Adebanji, Williams Ackaah (2024). Modelling of risk of health burden based on residents' exposure near trafficked intersection.

Journal of Transport & Health. https://doi.org/10.1016/j.jth.2024.101833

18. Razak M. Gyasi, Emelia Aikins, **Gift Dumedah**, Nelson Gyasi-Boadu, Prince Boakye Frimpong, Mary Sefa Boampong, Daniel Buor, Simon Mariwah, Francis Naab, David R. Phillips (2024). Risk of Sleep Problems in Middle-Aged and Older Adults Experiencing Bodily Pains: Serial Multiple Mediation Estimates of Emotional Distress and Activity Limitations. *American Journal of Geriatric Psychiatry*. https://doi.org/10.1016/j.jagp.2024.04.011
19. Akua Pokuaa Timpabi, **Gift Dumedah**, Charles Anum Adams, Jonathan Quaye-Ballard, Kwame Kwakwa Osei (2024). School accessibility assessment for walking and cycling; the role of street connectivity and land use variables. *Urban Planning and Transport Research*. https://doi.org/10.1080/21650020.2024.2312170
20. Samuel Akintomide Ajayi, Charles Anum Adams, **Gift Dumedah**, Atinuke O. Adebanji (2024). The Impact of Vehicle Engine Characteristics on Vehicle Exhaust Emissions for Transport Modes in Lagos City. *Urban Planning and Transport Research*. https://doi.org/10.1080/21650020.2024.2319328
21. Suale Iddrisu, Kabila Abass, Richard Serbeh, **Gift Dumedah**, Afriyie Kwadwo, Joseph Alhassan, Gabriel Alexander Kpevu, Razak M Gyasi (2024). Urban expansion and livelihood dynamics in peri-urban Tamale, Ghana. *Geographical Research*. https://doi.org/10.1111/1745-5871.12681
22. **G Dumedah** (2023). Characterizing the geography of potential healthcare accessibility in informal settlements in the Greater Kumasi area of Ghana. *African Geographical Review*.
23. **Gift Dumedah**, Seidu Iddrisu, Jesse Ahado Kwame, Jivana Nyarkoa Danquah, Daniel Kwaku Agyei, Sylvia Mensah, Ali Osman, Umar Farouk Moro, Christabel Asare, Abdul-Fatawu Yakubu (2023). Equity of spatial access to polling stations in selected regions in Ghana: are economically disadvantaged populations handicapped in their electoral access? *African Geographical Review*. https://doi.org/10.1080/19376812.2023.2254277
24. **Gift Dumedah**, Kabila Abass, Razak M. Gyasi, John Boulard Forkuor, Jacob Novignon (2023). Inefficient allocation of paratransit service terminals and routes in Ghana: The role of driver unions and paratransit operators. *Journal of Transport Geography*. https://doi.org/10.1016/j.jtrangeo.2023.103643
25. **Gift Dumedah**, Seidu Iddrisu, Christabel Asare, Samuel Adu-Prah, Sinead English (2023). Inequities in spatial access to health services in Ghanaian cities. *Health Policy and Planning*. https://doi.org/10.1093/heapol/czad084
26. Samuel Akintomide Ajayi, Charles Anum Adams, **Gift Dumedah**, O. Atinuke Adebanji, Augustus Ababio-Donkor, Williams Ackaah, Adekunle Kehinde (2023). Public perceptions of vehicular traffic emissions on health risk in Lagos metropolis Nigeria: A critical survey. *Heliyon*. https://doi.org/10.1016/j.heliyon.2023.e15712
27. Welbeck Oppong Adu, **Gift Dumedah**, Anum Charles Adams (2023). Surface Condition Assessment of Unpaved Roads Through the Use of Unmanned Aerial Vehicle. *International Journal of Pavement Research and Technology*. https://doi.org/10.1007/s42947-023-00374-z
28. Samuel Akintomide Ajayi, Charles Anum Adams, **Gift Dumedah**, Atinuke O. Adebanji, Williams Ackaah (2023). The impact of traffic mobility measures on vehicle emissions for heterogeneous traffic in Lagos City. *Scientific African*. https://doi.org/10.1016/j.sciaf.2023.e01822
29. Sunday Okafor, Cailis Bullard, **Gift Dumedah**, Emmanuel Kofi Adanu, Charles Anum Adams, Steven Jones (2023). The influence of socio-demographic and neighborhood characteristics on residents' safety perception of active mobility in Accra, Ghana. *Urban Planning and Transport Research*. https://doi.org/10.1080/21650020.2023.2276398
30. **Gift Dumedah**, Abdul-Karim Wumpini Fuseini, Isaac Marfo, Gloria Agbadi, Augustina Osei-Tutu, George Fordjour Kwadwo, Moses Asori (2022). A new spatial database framework for pedestrian indoor navigation based on the OpenStreetMap tag information. *Transactions in GIS*. https://doi.org/10.1111/tgis.12998
31. **Gift Dumedah**, Charles Anum Adams, Thomas Kolawole Ojo (2022). Access to paratransit bus terminals in Ghana: characterizing its geographical distribution by settlement density. *African Geographical Review*. https://doi.org/10.1080/19376812.2022.2096651

32. **Gift Dumedah**, Charles Ofosu Marfo, Samuel Ato Andam-Akorful (2022). An Interoperability Mobile Application for Location and Travel Planning Services in Ghana. *International Journal of Applied Geospatial Research*. https://doi.org/10.4018/ijagr.298299

33. CA Adams, **G Dumedah** (2022). Predictive Modelling of Delay and Assessment Level of Service (LOS) on Unsignalized Intersections in Urban City. *Adeleke University Journal of Engineering and Technology*. https://www.researchgate.net/profile/Samuel-Ajayi-9/publication/337144968_PREDICTIVE_MODELLING_OF_DELAY_AND_ASSESSMENT_LEVEL_OF_SERVICE_ON_UNSIGNALIZED_INTERSECTIONS_IN_URBAN_CITY/links/62e0872e7782323cf17acd6c/PREDICTIVE-MODELLING-OF-DELAY-AND-ASSESSMENT-LEVEL-OF-SERVICE-ON-UNSIGNALIZED-INTERSECTIONS-IN-URBAN-CITY.pdf

34. **Gift Dumedah**, Noah N-Yajasan Binche, George M. Bob-Milliar, Seidu Iddrisu, Edward Kwabena Twumasi, Jephthah Agyenim Boateng (2022). The case of electoral polling station data for geocoding in facilitating accessibility to social, economic and cultural opportunities in Ghana. *African Geographical Review*. https://doi.org/10.1080/19376812.2022.2076134

35. K Abass, **G Dumedah**, F Frempong (2022). Understanding the physical and human contexts of fluvial floods in rural Ghana. *International Journal of River Basin Management*.

36. **Gift Dumedah** (2021). Address points of landmarks and paratransit services as a credible reference database for geocoding. *Transactions in GIS*. https://doi.org/10.1111/tgis.12716

37. Wilson Agyei Agyare, Eliasu Salifu, **Gift Dumedah**, Nicholas Kyei-Baffour (2021). An Implications of Soil Erosion on Prospects of Maize and Groundnut Yield in Selected Northern Regions of Ghana. *DOAJ (DOAJ: Directory of Open Access Journals)*.

38. **Gift Dumedah**, Emmanuel Kofi Garsonu (2021). Characterising the structural pattern of urban road networks in Ghana using geometric and topological measures. *Geo Geography and Environment*. https://doi.org/10.1002/geo2.95

39. **Gift Dumedah**, Joshua Arthur, Jesse Senyo Kokroko, Solomon Twum Ampofo, Precious Adwoa Okyere, Eric Tweneboah Kodua (2021). Characterizing the geography of potential healthcare accessibility in informal settlements in the Greater Kumasi area of Ghana. *African Geographical Review*. https://doi.org/10.1080/19376812.2021.1991811

40. **Gift Dumedah**, Samuel Ato Andam-Akorful, Solomon Twum Ampofo, Isaac Abugri (2021). Characterizing urban morphology types for surface runoff estimation in the Oforikrom Municipality of Ghana. *Journal of Hydrology Regional Studies*. https://doi.org/10.1016/j.ejrh.2021.100796

41. Eliasu Salifu, Wilson Agyei Agyare, Nicholas Kyei-Baffour, **Gift Dumedah** (2021). Estimation of Soil Erosion in Three Northern Regions of Ghana Using RUSLE in GIS Environment. *International Journal of Applied Geospatial Research*. https://doi.org/10.4018/ijagr.2021040101

42. Kabila Abass, **Gift Dumedah**, Foster Frempong, Abdul Samed Muntaka, Divine Odame Appiah, Emmanuel Kofi Garsonu, Razak M. Gyasi (2021). Rising incidence and risks of floods in urban Ghana: Is climate change to blame? *Cities*. https://doi.org/10.1016/j.cities.2021.103495

43. **Gift Dumedah**, Asori Moses, Gumah Linda (2021). Spatial targeting of groundwater vulnerability in the Wewe-Oda river watershed in Kumasi, Ghana. *Groundwater for Sustainable Development*. https://doi.org/10.1016/j.gsd.2021.100641

44. **Gift Dumedah**, Gabriel Eshun (2020). The case of Paratransit - 'Trotro' service data as a credible location addressing of road networks in Ghana. *Journal of Transport Geography*. https://doi.org/10.1016/j.jtrangeo.2020.102688

45. Kabila Abass, Daniel Buor, Kwadwo Afriyie, **Gift Dumedah**, Alex Yao Segbefi, Lawrence Guodaar, Emmanuel Kofi Garsonu, Samuel Adu-Gyamfi, David Forkuor, Andrews Ofosu, Abass Mohammed, Razak M. Gyasi (2020). Urban sprawl and green space depletion: Implications for flood incidence in Kumasi, Ghana. *International Journal of Disaster Risk Reduction*. https://doi.org/10.1016/j.ijdrr.2020.101915

46. **Gift Dumedah** (2019). Hydro Genome Mapping: An Approach for the Diagnosis, Evaluation and Improving Prediction Capability of Hydro-Meteorological Models. *Water Resources Management*. https://doi.org/10.1007/s11269-019-02336-2

47. **Gift Dumedah**, Evans Kyeremanteng, Ema Dari (2019). Spatial Targeting of Soil Loss Using RUSLE in GIS: the case of Asokore Mampong Municipality, Ghana. *Journal of Applied Geospatial Information*. https://doi.org/10.30871/jagi.v3i1.1029

48. Kabila Abass, **Gift Dumedah**, Foster Frempong (2019). Understanding the physical and human contexts of fluvial floods in rural Ghana. *International Journal of River Basin Management*. https://doi.org/10.1080/15715124.2019.1653310

49. Dacosta Aboagye, Samuel Adu-Prah, **Gift Dumedah** (2017). Assessing social vulnerability to biophysical hazards in the Kumasi metropolis, Ghana. *GeoJournal*. https://doi.org/10.1007/s10708-017-9833-4

50. **Gift Dumedah**, Jeffrey P. Walker (2017). Assessment of model behavior and acceptable forcing data uncertainty in the context of land surface soil moisture estimation. *Advances in Water Resources*. https://doi.org/10.1016/j.advwatres.2017.01.001

51. **Gift Dumedah** (2017). Challenges and opportunities for geospatial integration into 'trotro' road travel in Ghana. *Journal of Applied Geospatial Information*. https://doi.org/10.30871/jagi.v1i2.520

52. **Gift Dumedah** (2017). Spatiotemporal Estimation of the Costs of Agricultural Beneficial Management Practices Using Rough Sets. *Agricultural Research & Technology Open Access Journal*. https://doi.org/10.19080/artoaj.2017.10.555785

53. **G Dumedah** (2016). Assimilation of SMOS soil moisture and brightness temperature products into a land surface model. *Remote sensing of environment*. https://www.sciencedirect.com/science/article/pii/S003442571530184X

54. **G Dumedah** (2016). High resolution soil moisture mapping. *Computing Ethics: A Multicultural Approach*. https://books.google.com/books?hl=en&lr=&id=V4bng2FdszoC&oi=fnd&pg=PA45&dq=info:V4kkCUVyO-0J:scholar.google.com&ots=9-v_Yr0J50&sig=HuH5JOU_T9VKIHf1lDvzliFZWOo

55. **Gift Dumedah** (2015). Copula-based downscaling of coarse-scale soil moisture observations with implicit bias correction. *IEEE Transactions on geoscience and remote sensing*. https://ieeexplore.ieee.org/abstract/document/7004843/

56. **Gift Dumedah** (2015). Optimization of a radiative transfer forward operator for simulating SMOS brightness temperatures over the Upper Mississippi Basin. *Journal of Hydrometeorology*. https://journals.ametsoc.org/view/journals/hydr/16/3/jhm-d-14-0052_1.xml

57. **G Dumedah** (2015). Root-zone soil moisture estimation from assimilation of downscaled Soil Moisture and Ocean Salinity data. *Advances in Water Resources*. https://www.sciencedirect.com/science/article/pii/S0309170815001700

58. **G Dumedah** (2015). SMOS soil moisture assimilation for improved hydrologic simulation in the Murray Darling Basin, Australia. *Remote Sensing of Environment*. https://www.sciencedirect.com/science/article/pii/S0034425715300547

59. **G Dumedah** (2015). Toward essential union between evolutionary strategy and data assimilation for model diagnostics: An application for reducing the search space of optimization problems using …. *Environmental Modelling & Software*. https://www.sciencedirect.com/science/article/pii/S1364815214002898

60. **G Dumedah** (2014). Assessing artificial neural networks and statistical methods for infilling missing soil moisture records. *Journal of Hydrology*. https://www.sciencedirect.com/science/article/pii/S0022169414003539

61. **G Dumedah** (2014). Assessing model state and forecasts variation in hydrologic data assimilation. *Journal of hydrology*. https://www.sciencedirect.com/science/article/pii/S0022169414002339

62. **G Dumedah** (2014). Assessment of land surface model uncertainty: A crucial step towards the identification of model weaknesses. *Journal of hydrology*. https://www.sciencedirect.com/science/article/pii/S0022169414006957

63. **G Dumedah** (2014). Evaluation of model parameter convergence when using data assimilation for soil moisture estimation. *Journal of Hydrometeorology*. https://journals.ametsoc.org/view/journals/hydr/15/1/

jhm-d-12-0175_1.xml

64. **G Dumedah** (2014). Examining differences in streamflow estimation for gauged and ungauged catchments using evolutionary data assimilation. *Journal of Hydroinformatics*. https://iwaponline.com/jh/article-abstract/16/2/392/3481

65. **G Dumedah** (2014). Integration of an evolutionary algorithm into the ensemble Kalman filter and the particle filter for hydrologic data assimilation. *Journal of Hydroinformatics*. https://iwaponline.com/jh/article-abstract/16/1/74/16

66. **G Dumedah** (2014). Intercomparison of the JULES and CABLE land surface models through assimilation of remotely sensed soil moisture in southeast Australia. *Advances in Water Resources*. https://www.sciencedirect.com/science/article/pii/S0309170814001948

67. **G Dumedah** (2013). Can SMOS data be used directly on the 15-km discrete global grid? *IEEE transactions on geoscience and remote sensing*. https://ieeexplore.ieee.org/abstract/document/6525315/

68. **G Dumedah** (2013). Evaluating forecasting performance for data assimilation methods: The ensemble Kalman filter, the particle filter, and the evolutionary-based assimilation. *Advances in Water Resources*. https://www.sciencedirect.com/science/article/pii/S030917081300122X

69. **G Dumedah** (2013). Evolutionary assimilation of streamflow in distributed hydrologic modeling using in-situ soil moisture data. *Advances in Water Resources*. https://www.sciencedirect.com/science/article/pii/S030917081200200X

70. **G Dumedah** (2013). Examining the impact of scale variations on soil moisture downscaling using temporal persistence. *20th International Congress on Modelling and Simulation,()*. https://users.monash.edu.au/~jpwalker/papers/MODSIM2013_Dumedah.pdf

71. **G Dumedah** (2013). Towards land surface model validation from using satellite retrieved soil moisture. *Proceedings of the 20th International Conference on Modelling and Simulation, Adelaide, Australia*. https://www.academia.edu/download/94029813/MODSIM2013_Yee.pdf

72. **G Dumedah** (2012). Evaluating Autoselection Methods Used for Choosing Solutions from Pareto-Optimal Set: Does Nondominance Persist from Calibration to Validation Phase? *Journal of Hydrologic Engineering*. https://doi.org/10.1061/(asce)he.1943-5584.0000389

73. **G Dumedah** (2012). Formulation of the evolutionary-based data assimilation, and its implementation in hydrological forecasting. *Water resources management*. https://doi.org/10.1007/s11269-012-0107-0

74. **G Dumedah** (2012). Integration of evolutionary based assimilation into Kalman-type methods for streamflow simulations in ungauged watersheds. *Journal of hydrology*. https://www.sciencedirect.com/science/article/pii/S002216941200933X

75. **G Dumedah** (2012). Pareto-optimality and a search for robustness: choosing solutions with desired properties in objective space and parameter space. *Journal of Hydroinformatics*. https://iwaponline.com/jh/article-abstract/14/2/270/3146

76. **Gift Dumedah** (2012). TECHNICAL PAPERS 1 Dispersion in Submerged Vegetated Flow with Coherent Vortices/S. Patil, VP Singh 10 Three-Dimensional Numerical Simulation of Saltwater Extraction Schemes to …. *JOURNAL OF HYDROLOGIC ENGINEERING*. https://www.academia.edu/download/95969983/8010a008c85c29412c7fc39c109d1ad7bc20.pdf

77. **G Dumedah** (2011). An integrated framework for a joint assimilation of brightness temperature and soil moisture using the nondominated sorting genetic algorithm II. *Journal of hydrometeorology*. https://journals.ametsoc.org/view/journals/hydr/12/6/jhm-d-10-05029_1.xml

78. **G Dumedah** (2011). Evaluation of statistical methods for infilling missing values in high-resolution soil moisture data. *Journal of Hydrology*. https://www.sciencedirect.com/science/article/pii/S0022169411000539

79. **G Dumedah** (2010). Selecting model parameter sets from a trade-off surface generated from the non-dominated sorting genetic algorithm-II. *Water resources management*. https://doi.org/10.1007/s11269-010-9668-y

80. **G Dumedah** (2008). Minimizing effects of scale distortion for spatially grouped census data using rough

sets. *Journal of Geographical Systems*. https://doi.org/10.1007/s10109-007-0056-y

81. **G Dumedah** (2008). Minimizing the effects of inaccurate sediment description in borehole data using rough sets and transition probability. *Journal of geographical systems*. https://doi.org/10.1007/s10109-008-0066-4

82. **G Dumedah** (2007). TV Cech, Principles of Water Resources: History, Development, Management and Policy, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY, USA (2005) ISBN 0-471-43861-8 446 …. *Agricultural Water Management*. https://ideas.repec.org/a/eee/agiwat/v91y2007i1-3p112-111.html

Book chapters 1

1. **G Dumedah** (2012). Digital soil mapping in the environment High resolution soil moisture mapping: JP Walker, G. Dumedah, A. Monerris, Y. Gao, C. Rüdiger & X. Wu R. Panciera O. Merlin. *Digital Soil Assessments and Beyond*. https://doi.org/10.1201/b12728-13/digital-soil-mapping-environment-high-resolution-soil-moisture-mapping-walker-dumedah-monerris-gao-rüdiger-wu-panciera-merlin-pipunic-ryu-zreda

Conference papers 8

1. Samuel A. Ajayi, Charles A. Adams, **Gift Dumedah**, Augustus Ababio-Donkor (2023). Exposure To Traffic-Related Air Pollution: A Public Health Concern? *E3S Web of Conferences*. https://doi.org/10.1051/e3sconf/202341805004

2. **G Dumedah** (2015). Assimilation of SMOS observations to improve hydrologic simulations in the Murray Darling Basin, Australia. *IGARSS*, *Date: 2015/07/26-2015/07/31*, *Location: Milan, Italy*. https://scholar.google.com/scholar?cluster=8531507905909427435&hl=en&oi=scholarr

3. **Gift Dumedah** (2014). A multiscale data assimilation algorithm for SMOS. *Computational Methods in Water Resources, international conference, Date: 2014/06/10-2014/06/13, Location: Stuttgart, Germany*. https://users.monash.edu.au/~jpwalker/abstracts/cmwr_smos/cmwr_smos.pdf

4. **G Dumedah** (2014). Assimilation of SMOS observations to improve streamflow simulation in the Murray Darling Basin, Australia. *SMOS for Water and Carbon Symposium, CESBIO, Date: 2014/11/13-2014/11/14, Location: Toulouse, France*. https://scholar.google.com/scholar?cluster=13147974699749641844&hl=en&oi=scholarr

5. **G Dumedah** (2013). Assimilation of SMOS data for improving surface water management. *IEEE International Geoscience and Remote Sensing Symposium, Date: 2013/07/21-2013/07/26, Location: Melbourne, Australia*. https://users.monash.edu.au/~jpwalker/papers/igarss13-5.pdf

6. **G Dumedah** (2013). Joint model state-parameter retrieval through the evolutionary data assimilation approach. *International Congress on Modelling and Simulation 2013: Adapting to Change: the multiple roles of modelling*. https://users.monash.edu.au/~jpwalker/papers/MODSIM2013_Dumedah2.pdf

7. **G Dumedah** (2013). SIMULATION OF SMOS BRIGHTNESS TERMPERATURES OVER THE UPPER MISSISSIPPI (USA) AND MURRAY DARLING (AUSTRALIA) BASINS. *IEEE International Geoscience and Remote Sensing Symposium, Location: Melbourne, Australia*. https://users.monash.edu.au/~jpwalker/papers/igarss13-6.pdf

8. **Gift Dumedah** (2012). On the Assimilation of Multi-Angular SMOS Data into a hydrologic model for improving surface water management. *IEEE International Geoscience and Remote Sensing Symposium, Date: 2012/07/22-2012/07/27, Location: Munich, Germany*. https://www.academia.edu/download/107896385/igarss12-3.pdf

Reports 3

1. Afifah, Fatima, Dixon, James, Adams, Charles Anum, **Dumedah, Gift**, Amoah, Mary, Dzisi, Emmanuel, Pierard, Elena, Orjuela, Juan Pablo, Boateng, Festival (2026). Towards Climate-Compatible Transport Pathways in Ghana: Co-creating Future Scenarios for an Integrated and Electrified Transport System. *Zenodo (CERN European Organization for Nuclear Research)*. https://doi.org/10.5281/zenodo.22679839

2. CA Adams, **G Dumedah** (2022). Transport related air pollution and its implications on public health along selected road corridors in lagos metropolis, nigeria. *Southern African Transport Conference*. https://

repository.up.ac.za/items/89c3d1ef-4ad8-426d-82c8-07a498c46c8f

3. **G Dumedah** (2005). Exploring the characterization of uncertainty in census and borehole data using rough sets. *Simon Fraser University*. https://summit.sfu.ca/item/9995

Theses 1

1. **G Dumedah** (2010). Multi-objective calibration of hydrological models and data assimilation using genetic algorithms. *University of Guelph*. https://atrium.lib.uoguelph.ca/bitstream/10214/19705/1/Dumedah_Gift_PhD.pdf