

# Curriculum Vitae

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## ACADEMIC QUALIFICATIONS

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- **Dr. Phil. Nat. (Natural Sciences)**, Institute for Geosciences, University of Frankfurt, Germany, December, 2012. Specialization: Seismic noise variations, Shear wave splitting in anisotropic environments and *b*-value analysis.
- **Master (Geoinformatics)**, The International Institute for Geo-information Science and Earth Observations, ITC, Netherlands, September, 2007. IFA: Building a multimodel transport network for Enschede.
- **MSc (Geology)**, Makerere University, Uganda, August, 2006. Dissertation: Evaluating the use of Vertical Electrical Sounding as a Groundwater Exploration technique to improve the Certainty of Borehole yield in Kamuli District, Eastern Uganda.
- **BSc (Geology)**, Makerere University, Uganda, July, 2002.

## ACADEMIC HONORS AND AWARDS

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- Scholar, The German Academic Exchange Services (DAAD), University of Frankfurt, Germany, 2008-2012.
- Netherlands Fellowship Programme Scholar, International Institute for Geoinformation Science and Earth Observations, ITC, The Netherlands, 2006-2007.
- Scholar, The German Academic Exchange Services (DAAD), Makerere University, Uganda, 2003-2006.

## ACADEMIC EXPERIENCE

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- **Head/Chair**, Department of Geology and Petroleum Studies, Makerere University, ([www.geology.mak.ac.ug](http://www.geology.mak.ac.ug)).
- **Senior lecturer**, Department of Geology and Petroleum Studies, 2018 - Present
- **Lecturer**, Department of Geology and Petroleum Studies, 2013-2018.
- **Research Assistant**, Institute for Geosciences, University of Frankfurt, Germany, 2008-2011.
- **Assistant Lecturer**, Department of Geology and Petroleum Studies, 2008-2013.

## SCIENTIFIC PROJECTS

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- EnPe Programme (2014-2015), successfully applied for renewal of project from January 2016 – January 2020, to involve Makerere University, University of Juba, South Sudan and University of Bergen, Norway totalling NOK 8.5 million (~US\$ 1 million)
- RiftLink Project (interdisciplinary university project involving 12 different working groups).
  - Period: 2006 – 2013
  - Hosts: Uganda (Makerere University), Democratic Republic of Congo (Goma Volcanic Observatory) and Germany (University of Frankfurt).
  - Funding agencies: University of Frankfurt / German Research Council (DFG) totaling to €11 million.
  - Working group: Seismicity and lithospheric structure of the Rwenzori region, University of Frankfurt, Frankfurt am Main, Germany.

## CURRICULUM REVIEWS

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- Currently Spearheading the reviewing of the Bachelor of Science in Petroleum Engineering curriculum of International University of East Africa (IUEA)
- Spearheaded the development of Minimum Standards for Bachelor of Science in Petroleum Engineering Programme on Behalf of National Council for Higher Education (NCHE), 2022
- Participated in the review Bachelor of Science in Petroleum Geosciences and Production, 2021, Makerere University
- Participated in the review Bachelor of Science (Geology), 2021, Makerere University
- Participated in the development of the Bachelor of Science in Petroleum Geosciences and Production programme, 2009, Makerere University

## POSTGRADUATE STUDENTS SUPERVISED

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- **Jok William Nyok:** The petrophysical heterogeneity of Reservoir(s) of Moleeta Oilfield, Melut Basin, South Sudan. (MSc in Petroleum Geosciences: Under supervision)
- **Kenyi Karen:** Investigating the lateral sealing ability of the Yabus Formation Melut basin, South Sudan. (MSc in Petroleum Geosciences: Under supervision)
- **Katana Ritah:** Analyzing the Stratigraphic detail of Thin Beds Interbedding in the Lake Edward- George Basin EA4: Case Study: The South-Eastern Lakes George -Edward Basin. (MSc in Petroleum Geosciences: Under supervision)
- **Ttendo Kabuye Aaron:** Intergrated 3D Facies Modelling of the Makondo Fault Zone, Semliki Basin, Western Uganda. (MSc in Petroleum Geosciences: Completed)
- **Kaloli Namukowa:** Validation of Direct Hydrocarbon Indicators for Assessment of the Turaco Prospect in the Semliki Basin, Western Uganda. (MSc in Petroleum Geosciences: Under supervision).

- **Karokola Mark:** Identification of Geologic Zones Prone to Stuck Pipe Hazards in the Semliki Basin, Western Uganda. (MSc in Petroleum Geosciences: Completed)
- **Silvia Igale Francis:** Structural Complexity of the Semliki Basin and its Potential Influence on the Petroleum Processes. (MSc in Petroleum Geosciences: Graduated 2020)
- **Firminus Mugumya:** Delineation of Fault Features in the Semliki Basin Using 3D Seismic Attributes. (MSc in Petroleum Geosciences: Graduated 2018)
- **Winfred Kataike:** Detection of Potential Hydrocarbon Traps in the Semliki Basin using Gravity and Magnetic data. (MSc in Petroleum Geosciences: Graduated 2017)
- **Sserunjogi Joseph:** Reservoir Characterization Using Stochastic Inversion of 3D Seismic Data in the Turaco Prospect Area, Western Uganda. (MSc in Petroleum Geosciences: Graduated 2017)
- **Titus T. M. M. Draleke:** Groundwater Physical and Hydrochemical Characteristics of the Weathered Crystalline Rock Aquifers in Kamuli District, Eastern Uganda. (MSc in Geology: Graduated 2016)

## POSTGRADUATE STUDENTS EXAMINED

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- Lematia Cosmas: Thesis - Delineation of the Cenozoic Petroleum Plays in the Main Pass Area, North Eastern Gulf of Mexico, United States of America. Msc Petroleum Geosciences, Makerere University. Graduated 2023
- Yobu Joyce Martin: *Thesis - Delineation of Petroleum Plays in the Semliki Basin, Albertine Graben, Western Uganda from trap-type perspective.* Msc Petroleum Geosciences, Makerere University. Graduated 2019
- Guma Brian: Thesis - *Potential Hydrogeological Contaminants derived from Petroleum Activities in the Albertine Graben.* PhD in Geology, Makerere University. Graduated 2021
- Sithembele Zangqa: Thesis - *Geological and geophysical studies on the hydrocarbon resource in the Durban Basin, South Africa.* Msc in Geology, University of Fort Hare, South Africa. Under Examination
- Kivumbi Daniel: Thesis - *Establishing a Potential Carbon dioxide Geosequestration Site using 3D Seismic Attributes and Well Log data around Turaco Prospect, Semliki Basin, Western Uganda.* MSc in Petroleum Geosciences, Makerere University Graduated 2017
- Anyama Lagu Joseph James: Thesis - *Genesis of Gold Mineralisation around Kitaka and Kampono areas in Kamwenge and Ibanda Districts, Southwestern Uganda.* MSc in Geology, Makerere University Graduated.2017
- Bwire Ronald: Thesis - *Rock Physics and Fluid Substitution Modelling for the Feasibility of Carbondioxide Sequestration in the Semliki Basin, Western Uganda. Case Study: Turaco – 3 Well.* MSc in Petroleum Geosciences, Makerere University Graduated.
- Ajuna Barnet: Thesis - *2D Basin and Petroleum System Modeling of the Semliki Basin, Western Uganda.* MSc in Petroleum Geosciences, Makerere University Graduated.

- **A.G. Batte**. (2022) Spectral analysis of seismic noise at recording stations, Albertine rift (Manuscript in Preparation)
- Zhang Xin, Justin Jordan Pidho, **Arthur Godfrey Batte**, Mukiibi Ssewanyaga Ivan, Chuanliang Yan, Yuanfang Cheng (2024). Mechanisms of Near-Wellbore Fracture Growth Considering the Presence of Cement Sheath Microcracks and Their Implications on Wellbore Stability, *Engineering Fracture Mechanics Vol 309*, 110422, <https://doi.org/10.1016/j.engfracmech.2024.110422>
- D.S. Dawoud, and **A.G. Batte** (2024). Dictionary of Scientific Quantities, Volume I. Oxford Book Writers
- D.S. Dawoud, and **A.G. Batte** (2024). Dictionary of Scientific Units of Measurements, Volume II. Oxford Book Writers
- J.J. Pidho, Y. Cheng, **A.G. Batte**, C. Yan, and I.S. Mukiibi, (2023). Activation of Natural Fractures during Hydraulic Fracturing in Elastoplastic Jointed Rocks, *Engineering Fracture Mechanics, Vol 290* 109502, <https://doi.org/10.1016/j.engfracmech.2023.109502>.
- J.J. Pidho, **A.G. Batte**, M.J. Altammar, Y. Cheng, I.S. Mukiibi, and C. Yan (2023). Inclusion of anisotropy in understanding rock deformation and inter-well fracture growth in layered formation through CZM based XFEM, Vol 227, 211663, *Geoenergy Science and Engineering*, <https://doi.org/10.1016/j.geoen.2023.211863>
- **A.G. Batte**, A. Schumann, and E.M. Twesigomwe (2021). Seismic anisotropy accrued by seven unusually deep local earthquakes (between 50 and 60km) in the Albertine Rift: Implications of asthenospheric melt upwelling. *J. Seismol.* 25(3): 921-936
- **A.G. Batte** and G. Rumpker. (2019). Spatial mapping of b-value heterogeneity beneath the Rwenzori region, Albertine rift: evidence of magmatic intrusions. *J. Volcan. Geotherm. Res.* **831**:238-245
- B. Homuth, U. Löbl, **A.G. Batte**, K. Link, C.M. Kasereka, and G. Rumpker. (2016). Seismic anisotropy of the lithosphere/asthenosphere system beneath the Rwenzori region of the Albertine Rift. *Int. J. Earth Sci.* **105**:1681-1692
- M. Gummert, M. Lindenfeld, I. Wölbern, G. Rumpker, K. Celestin, and **A.G. Batte**. (2015). Crustal structure and high-resolution Moho topography across the Rwenzori region (Albertine rift) from P-receiver functions. *Geol. Soc. Lon. Spec. Publ.*, **420**:69-82
- **A.G. Batte**, Rumpker, G., Lindenfeld, M., and Schumann, A. (2014). Structurally controlled seismic anisotropy above small earthquakes in crustal rocks beneath the Rwenzori region, Albertine rift, Uganda. *J. African Earth Sci.* **100**:579-585
- Lindenfeld, M., Rumpker, G., **Batte, A.G.**, and Schumann, A. (2012). Seismicity from February 2006 to September 2007 at the Rwenzori Mountains, East African Rift: earthquake distribution, magnitudes and source mechanisms. *Solid Earth*, **3**:251-264.

- Lindenfeld, M., Rümpker, G., Link, K., Koehn, D., and **Batte, A.G.** (2012). Fluid triggered earthquake swarms in the Rwenzori region, East African Rift Evidence for rift initiation. 8/14/2014 *Tectonophysics*, **566**:95-104.
- **A.G. Batte**, E. Barifajjo, J.M. Kiberu, W. Kawule, A. Muwanga, M. Owor, and J. Kisekulo. (2010). Correlation of Geoelectric data with aquifer parameters to delineate groundwater potential of hard rock terrain in central Uganda. *J. Pure. Appl. Geophys.*, **167**:1549-1559.
- **A.G. Batte**, A. Muwanga, P.W. Sigrist and M. Owor. (2008). Vertical Electrical Sounding as an exploration technique to improve on the certainty of groundwater yield in the fractured crystalline basement aquifers of Eastern Uganda. *Hydrogeology*. **16**:1683-1693.

## CONFERENCE PROCEEDINGS

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- M. Lindenfeld, G. Rümpker, C.M. Kasereka, **A.G. Batte**, A. Schumann. (2013) Seismicity and magmatic processes in the Rwenzori region of the Albertine Rift. *EGU General Assembly. EGU2013-11867*
- M. Lindenfeld, G. Rümpker, I. Wölbern, **A.G. Batte**, and A. Schumann Complex seismicity patterns in the Rwenzori region: insights to rifting processes at the Albertine Rift. *Geophys. Res. Abst., Vol. 14, EGU2012-1551, EGU General Assembly 2012.*
- I. Wölbern, G. Rümpker, **A.G. Batte**, A. Jakovlev, and M. Lindenfeld. (2010) Seismic structures of the Rwenzori region in Western Uganda derived from local and teleseismic earthquakes. *Geophys. Res. Abstr. Vol. 12, EGU2010-9962, EGU General Assembly.*
- M. Kasereka, M. Wafula, K. Kavuke, M. Ciraba, M. Yalire, K. Kavotha, Hamaguchi, G. Rumpker, A Schumann, **A.G. Batte**, and M. Kasahara. Impact de l'activite seismique du rift est Africain sur le volcanisme des Virunga: Cas du volcan Nyaragongo.. *Internationale sur la seismicite et les phenomenes connexes du bassin du lac KIVU. Volume Abstrats, Novembre, 2009 a Bukavu Provice du Sud-Kivu.*
- I. Woelbern, G. Rümpker, A. Schumann, and **A.G. Batte**. Crustal Thickness and Seismic Anisotropy of the Rwenzori Region (Albertine Rift) From Receiver Functions and Shear-Wave Splitting. *AGU, Fall Meeting 2008, abstract no. S21C-1841.*
- A. Jakovlev, M. Lindenfeld, I. Wölbern, A. Schumann, A. Muwanga, **A.G. Batte**, I. Koulakov, and G. Rümpker. Mantle Plumes, Earthquakes and Rifting: Seismological constraints on the structure of the crust and mantle in the Rwenzori region. *RiftLink Workshop 2008, Herz-Jesu Kloster, Neustadt/Weinstr., Germany.*
- A. Jakovlev, G. Rümpker, **A.G. Batte**, A. Schumann, and I. Koulakov. Local travel-time tomography of the Rwenzori region. *The International conference on the East African Rift System (EARS-07), 23-25 July 2007, Kampala, Uganda.*
- G. Rümpker, A. Schumann, **A.G. Batte**, I. Wölbern, M. Lindenfeld, E. Twesigomwe and A. Jakovlev. Seismological studies of the Rwenzori region within the western branch of the East African Rift System. *The International conference on the East African Rift System (EARS-07), 23-25 July 2007, Kampala, Uganda.*

- I. Wölbern, **A.G. Batte**, M. Lindenfeld, A. Jakovlev, E. Twesigomwe, G. Rümpker and R. Kind. Rift-related uplift of the Rwenzori mountains in Uganda investigated by seismological methods. *Geophysical Research Abstracts*, Vol. 9, 06346, 2007, SRef-ID: 1607 7962/gra/EGU2007-A-06346.
- G. Rümpker, A. Jakovlev, **A.G. Batte**, M. Lindenfeld, A. Schumann, and I. Wölbern. Seismological Investigation of Rift Related Uplift: The Rwenzori Network in Western Uganda. *AGU, Fall Meeting 2007*, abstract no. T31F-07