

MOHAMED A. METWALY

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Full name	Mohamed Ahmed Metwaly
Nationality	Egyptian
Birth date	26 th , February 1970
Current academic degree	Professor of Applied and Environmental Geophysics
Current occupation	Prof. of exploration geophysics, King Saud University, Saudi Arabia
Mobile in Saudi Arabia	+966 50 9499610

ACADEMIC POSITIONS

2013- till now	Archaeology Dept., College of Tourism and Archaeology, King Saud University.
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MEMBERSHIPS

- 1- Member of the Saudi Society for Camel Studies.
- 2- Member of the Saudi Society for Archaeological studies.
- 3- Member of Archaeological prospecting society.
- 4- Member of Saudi Society for earth sciences.
- 5- Member of Arabian Geoscientists

RESEARCH INTERST

I'm geophysicist, currently working at King Saud University, Saudi Arabia since 2008. I graduated my master degree in applied Geophysics in 1999 from Mansoura University, Egypt, and then i started the PhD study as a joint work between ETHZ, Zurich and Mansura University in 2000 and awarded the Ph.D. degree in 2004. I attended to Tokyo University, from 2006 to 2008. My main field of research is the applied Geophysics and its contributions to solve the environmental and engineering problems.

Currently I'm associate prof. at Archaeology dept. King Saud University and I'm so interesting about the Camel studies based on three categories, the economic, the cultural and the scientific branches.

LIST OF PUBLICATIONS

Articles in Journals:

- 57- Kehinde D. Oyeyemi, Ahzegbobor P. Aizebeokhai, Abayomi A. Olajojo, Emmanuel E. Okon, Divine V. Kalu and Mohamed Metwaly (2023): Hydrogeophysical Investigation in Parts of the Eastern Dahomey Basin, Southwestern Nigeria: Implications for Sustainable Groundwater Resources Development and Management, *Water* 2023, 15, 2862. <https://doi.org/10.3390/w15162862>
- 56- Kehinde D. Oyeyemi, Ahzegbobor P. Aizebeokhai, Chukwuemeka S. Ukabam, Olusola T. Kayode, Abayomi A. Olajojo, and Mohamed Metwaly (2023): Nonlinear inversion of electrical resistivity sounding data for multi-layered 1-D earth model using global particle swarm optimization (GPSO), *Heliyon* 9, <https://doi.org/10.1016/j.heliyon.2023.e16528>
- 55- Kehinde D. Oyeyemi, Joyce Abuka-Joshua, Oluwatosin J. Rotimi, Bastien Dieppois, Modreck Gomo, Abayomi A. Olajojo, Philips O. Falae and Mohamed Metwaly (2023): Geoelectrical Characterization of Coastal Aquifers in Agbado-Ijaye, Lagos, Southwestern Nigeria; Implications for Groundwater Resources Sustainability, *Sustainability* 2023, 15, 3538. <https://doi.org/10.3390/su15043538>.
- 54- Szalai, S., ; Baracza, MK; Karpi, M; Szucs, P; Metwaly, M; Turai, E; Facsko, G; Zubair, M; Szarka, L; Gribovski, K (2022): Improving ERT Imaging of Small-Size 2D Targets Using Different Strategies, *PURE AND APPLIED GEOPHYSICS*, doi10.1007/s00024-022-03204-8,
- 53- Okon, E.E.; Kudamnya, E.A.; Oyeyemi, K.D.; Omang, B.O.; Ojo, O.; Metwaly, M. (2022): Field Observations and Geophysical Research Applied to the Detection of Manganese (Mn) Deposits in the Eastern Part of Oban Massif, South-Eastern Nigeria: An Integrated Approach. *Minerals* 2022, 12, 1250. <https://doi.org/10.3390/min12101250>.

- 52- Kehinde D. Oyeyemi, Ahzegbobor P. Aizebeokhai, Mohamed Metwaly, Oluseun Omobulejo, Oluseun A. Sanuade, Emmanuel E. Okon (2022): Assessing the suitable electrical resistivity arrays for characterization of basement aquifers using numerical modeling, *Heliyon* 8, e09427, <https://doi.org/10.1016/j.heliyon.2022.e09427>.
- 51- Mohamed Metwaly, Eslam Elawadi, Ayman I. Taha, Gad El-Qady, Ahmed Anter, Szalai Sándor (2021): Geomagnetic and Geoelectrical resistivity Study of the groundwater aquifer properties and groundwater occurrence budget along Wadi Nu'man, Holly Makkah area, Saudi Arabia, *Arabian Journal of Geosciences* 14(22), DOI: 10.1007/s12517-021-08661-4.
- 50- Metwaly, M.; Abdalla, F.; Taha, A.I. (2021): Hydrogeophysical Study of Sub-Basaltic Alluvial Aquifer in the Southern Part of Al-Madinah Al-Munawarah, Saudi Arabia. *Sustainability*, 13, 9841. <https://doi.org/10.3390/su13179841>.
- 49- Fathy Shaaban & Abdullah Othman & Turki Habeebullah & Mohamed Metwaly (2021): Geo-environmental impact assessment of rock-cutting activities on the mountainous urban areas, western Saudi Arabia, *Arabian Journal of Geosciences* (2021) 14:709, <https://doi.org/10.1007/s12517-021-07081-8>.
- 48- Pervez Khalid, Muhammad Irfan Ehsan, Mohamed Metwaly & Shahzada Khurram (2021): Mechanical and Elastic Characterization of Shale Gas Play in Upper Indus Basin, Pakistan, *Arab. J. Sci. Eng.*, <https://doi.org/10.1007/s13369-020-05275-y>.
- 47- Muhammad Hasan, Yanjun Shang, Mohamed Metwaly, Weijun Jin, Majid Khan and Qiang Gao (2020): Assessment of Groundwater Resources in Coastal Areas of Pakistan for Sustainable Water Quality Management Using Joint Geophysical and Geochemical Approach: A Case Study, *Sustainability* 2020, 12, 9730; doi:10.3390/su12229730.
- 46- Kehinde D. Oyeyemi, Ahzegbobor P. Aizebeokhai, Mohamed Metwaly, Michael A. Oladunjoye, Baba Mayowa A. Bayo-Solarin, Oluseun A. Sanuade, Cherish E. Thompson, Francis S. Ajayi, Osagie A. Ekhuagere (2020): Evaluating the groundwater potential of coastal aquifer using geoelectrical resistivity survey and porosity estimation: A case in Ota, SW Nigeria, *Groundwater for Sustainable Development*, doi: <https://doi.org/10.1016/j.gsd.2020.100488>.
- 45- M. Zubair, E. Prácer, M. Metwaly, I. Lemperger, L. Szarka, M. Israil, S. Szalai (2020): A comparative study of the imaging capability of quasi-null and dipole-dipole electrode configurations over an elongated, dipping, semi-infinite conducting body, *Journal of Applied Geophysics* 175, 103969.
- 44- Abdulrahman Alsuhaibani and Mohamed Metwaly (2020): Integrated results of aerial image, ground magnetics and excavation for settlement assessment at Dadan site, Al-'Ula area, Saudi Arabia, *Archaeological prospecting*, doi.org/ 10.1002/arp.1770.
- 43- S Szalai, K Szokoli, E Prácer, M Metwaly, M Zubair, L Szarka (2020): An alternative way in electrical resistivity prospecting: the quasi-null arrays, *Geophysical Journal International*, Volume 220, Issue 3, March 2020, Pages 1463–1480.
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- 40- Szokoli, K., Szarka, L., Metwaly, M., Kalma'r, J., Prácer, E., Szalai, S. (2017): Characterisation of a landslide by its fracture system using Electric Resistivity Tomography and Pressure Probe methods, *Acta Geod Geophys*, DOI 10.1007/s40328-017-0199-3.
- 39- S. Szalai, K. Szokoli, M. Metwaly, Z. Gribovszki and E. Prácer (2016): Prediction of the location of future rupture surfaces of a slowly moving loess landslide by electrical resistivity tomography: Location of future rupture surfaces, *Geophysical Prospecting*, doi: 10.1111/1365-2478.12421.
- 38- Mohamed Metwaly, Mohamed El Alfy, Eslam Eawadi, Ahmed Ismail and Gad El-Qady (2015): Estimating aquifer hydraulic parameters in the limestone aquifer using electrical resistivity measurements; a case study at

Khuff Formation Aquifer, Saudi Arabia, International Conference on Engineering Geophysics, Al Ain, United Arab Emirates, 15-18 November 2015, <https://doi.org/10.1190/iceg2015-060>.

- 37- Sayed S. R. Moustafa , Nassir SN Al-Arifi, Muhammad Kamran Jafri, Muhammad Naeem, Eslam A. Alawadi, Mohamed A. Metwaly (2016): First level seismic microzonation map of Al-Madinah province, western Saudi Arabia using the geographic information system approach, *Environmental Earth Sciences*, 75:251
- 36- Mohamed Metwaly (2015): Application of GPR technique for subsurface utility mapping: A case study from urban area of Holy Mecca, Saudi Arabia, *Measurement*, 60, 139–145.
- 35- S. Szalai, A. Novák, M. Metwaly, B. Neduczka, E. Törös, K. Szokoli (2014): Studying the Fracture System of a Landslide by ERT Method. 06/2014;, DOI:10.3997/2214-4609.20140938.
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- 30- Sándor Szalai, István Lemperger, Mohamed Metwaly, Árpád Kis, Viktor Wesztergom, Kitti Szokoli, Attila Novák (2014): Multiplication of the depth of detectability using γ 11n arrays, *Journal of Applied Geophysics*, Vol. 107, Pp. 195–206.
- 29- Sándor Szalai, Kitti Szokoli, Mohamed Metwaly (2014): Delineation of landslide endangered areas and mapping their fracture systems by the pressure probe method, *Landslides*, DOI: 10.1007/s10346-014-0509-6
- 28- Ahmed Ismail, F. Brett Denny, Mohamed Metwaly (2014): Comparing Continuous Profiles from MASW and Shear-wave Reflection Seismic Methods, *Journal of Applied Geophysics*, Vol. 105, Pp. 67–77.
- 27- Mohamed Metwaly, Eslam Elawadi, Sayed S. R. Moustafa and Nasser Al Arifi (2014): Combined Inversion of Electric Resistivity and Transient Electromagnetic for Mapping Groundwater Contamination Plumes in Al Quwy'yia Area, Saudi Arabia, *Journal of Environmental and Engineering Geophysics (JEEG)* 19, pp. 45–52.
- 26- Abeer El-Kenawy, Mohamed Metwaly, Khalid Gemal, Amr Abd El-Raouf (2013): Contribution of geoelectrical resistivity sounding for paleoenvironment assessment at Saft El-Henna and Tell El-Dab'a archaeological sites, eastern Nile Delta, Egypt, *Exploration Geophysics*, vol. 44, pp. 282–288.
- 25- Mohamed Metwaly, Eslam Elawadi, Sayed S. R. Moustafa, Nassir Al Arifi, Mohamed El Alfy, EKab Al Zaharani (2013): Groundwater contamination assessment in Al-Quwy'yia area of central Saudi Arabia using transient electromagnetic and 2D electrical resistivity tomography, *Environ Earth Sci.*, 71:827–835.
- 24- Mohamed Metwaly, Fouzan AlFouzan (2012): Application of 2-D geoelectrical resistivity tomography for subsurface cavity detection in the eastern part of Saudi Arabia, *Geoscience Frontiers* 4: 469-476.
- 23- Sayed S. R. Moustafa, Elkhedr H. Ibrahim, Eslam Elawadi, Mohamed Metwaly and Naser Al Agami (2012): Seismic refraction and resistivity imaging for assessment of groundwater seepage under a Dam site, Southwest of Saudi Arabia, *International Journal of the Physical Sciences* Vol. 7(48), pp. 6230-6239.
- 22- Mohamed Metwaly & Mohamed Ahmed Khalil & El-Said Al-Sayed & Abeer El-Kenawy (2012): Tracing subsurface oil pollution leakage using 2D electrical resistivity tomography, *Arab J Geosci.*, Volume 6, Issue 9 pp. 3527-3533.
- 21- Mohamed. Metwaly, Eslam Al Awadi, S. Shaaban, F. Al Fouzan, S. Al Mogren, N. Al Arifi (2012): Groundwater exploration using geoelectrical resistivity technique at Al-Quwy'yia area Central Saudi Arabia, *International Journal of the Physical Sciences*, vol. 7(2), pp. 317-326.

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- 19- Kyosuke Onishi, Tomochika Tokunaga, Yoshihiro Sugimoto, Naoyuki Yamada, Mohamed Metwaly, Katsuro Mogi, Ichita Shimoda, Yoshinori Iwasaki (2011) Classifying destruction areas in a stone structure from joint interpretation of resistivity and ground-penetrating radar data, *Proceedings of the 10th SEGJ International Symposium*, 2011.
- 18- Mohamed Metwaly, Gad El-Qady, Usama Massoud, Abeer El-Kenawy, Jun Matsushima and Nasser Al-Arifi (2010) Integrated Geoelectrical survey for ground water and shallow subsurface evaluation: Case study at Siliyin spring, El-Fayoum, Egypt. *International journal of earth science*, vol 99, No. 6, pp. 1427-1436.
- 17- Usama Massoud, Gad El Qady, Mohamed Metwaly, and Fernando Santos (2009): Delineation of Shallow Subsurface Structure by Azimuthal Resistivity Sounding and Joint Inversion of VES-TEM data: Case study near Lake Qaroun, El Fayoum, Egypt. *Pure and Applied Geophysics*, 166, pp. 701-719.
- 16- M. Metwaly, G. El-Qady, J. Matsushima, S. Szalai, N. S. N. Al-Arifi, and A. Taha, (2008): Contribution of 3-D electrical resistivity tomography for landmines detection. *Nonlin. Processes Geophys.*, vol. 15, pp. 977–986.
- 15- M. Metwaly (2007): Detection of Metallic and Plastic Landmine using the GPR and 2D Resistivity Techniques, *Natural Hazards and Earth Syst. Sci. J. (NHESS)*, vol.7, pp. 755–763.
- 14- Kyosuke Onishi, Tomochika Tokunaga, Mohamed Metwaly, Katsuro Mogi, Ichita Shimoda and Yoshinori Iwasaki (2007): Ground-penetrating radar survey in Bayon temple, Angkor, *proc. SEGJ 117th*, pp. 291-294.
- 13- Adel Mohamed, Mohamed Metwaly, Mohamed Khalil, El Said Al Sayed (2007): Assessment of transient electromagnetic method in wadi-fill deposits, South Sinai, Egypt, *Egyptian Geophysical Society Journal (EGS)*, vol. 20, pp. 12-19.
- 12- Mohamed Metwaly, Ahmed Ismail, Jun Matsushima (2007): Evaluating some Factors that affect feasibility of using Ground Penetrating Radar for Landmine Detection, *Applied Geophysics*, vol. 4, No. 3, pp. 221-230.
- 11- Mohamed Metwaly (2007): Metallic and plastic landmine-like objects assessment using GPR technique, *SAGEEP 20th*, pp. 850-860.
- 10- Ahmed El-Galladi, Gad El-Qady, Mohamed Metwaly and Sultan Awad (2007): Mapping peat layer using surface geoelectrical methods at Mansoura environs, Nile Delta, Egypt. *Mansoura Journal of Geology and Geophysics*, vol.34(1), pp. 59-78.
- 9- A. K. Mohamed, M. Metwaly, M. Khalil, and E. Al Sayed (2006): Evaluation of the transient electromagnetic method as applied in wadi-fill deposits, South Sinai, Egypt, *Egyptian Geophysical Society Journal*, vol.4, No. (1), pp. 189-198.
- 8- El-Kenawy A., El-Said, A., El-Qady, G. and Metwaly M. (2006): Geophysical Survey for Archaeological Prospection At Tell Basta, Sharkia Governorate, Egypt. *NRIAG J. of Geophysics*, Special Issue, pp. 17-31.
- 7- Mohamed Metwaly, J. Matsushima, Gad El-Qady and Abbas M. Abbas (2006): Landmines detection and assessment using GPR survey, in *Proc. 8th SEGJ-Imaging and Interpretation*, pp. 200-203.
- 6- Mohamed Metwaly, Mohamed Khalil, El-Said El-Sayed and Salah Osman., (2006): Hydrogeophysical study to estimate water seepage from the northwestern Lake Nasser, Egypt. *Journal of Geophysics and Engineering*, vol.3, pp. 21-27.
- 5- Mohamed Metwaly, Alan Green, Heinrich Horstmeyer, Hansruedi Maurer, Abbas M. Abbas, and A. Gh. Hassaneen., (2005): Combined seismic tomographic and ultra-shallow seismic reflection study of an early dynastic mastaba, Saqqara, Egypt. *Archaeological prospection*, vol. 12, No.4, pp.245 – 256.
- 4- Mohamed Metwaly, Gad El-Qady and El-Said Ahmed., (2005): Detecting the defunct old Nile channel using joint inversion of VES and TEM data at Memphis area, Egypt. *NRIAG J. of Geophysics*, vol. 4, No. 1, pp. 35-49.
- 3- Gad El-Qady, Mohamed Metwaly, Ahmed El-Galladi and Keisuke Ushijima., (2005): Credibility of Peat layer detection using surface geophysical techniques at Nile Delta, Egypt, *Memoirs of the Faculty of Kyushu University*, vol. 26, No. 1, pp. 1-13.

- 2- A. S. El-Mahmoudi, M. M. El-Gamili, E. A. El-Sayed, A. Gh. Hassaneen & M. A. Metwaly, (1999): Geoelectric Resistivity Exploration of Abydos Area, Sohag Governorate, Upper Egypt., Proc. 1st International symposium on Geophysics, Egypt, pp. 54-67.
- 1- M. M. El-Gamili, A. S. El-Mahmoudi, S. Sh. Osman, Abdel Radi, Gh. Hassaneen & M. A. Metwaly, (1999): Geoelectric Resistance Scanning on Parts of Abydos Cemetery Region, Sohag Governorate, Upper Egypt, Archaeological Prospection, vol. 6, pp. 225-239.

Book and Chapters in Book:

- ١- محمد متولي (٢٠٠٧): الكهرومغناطيسية وتطبيقاتها في مجال الإستكشاف الجيوفيزيقي , NRIAG ,Cairo , Egypt
- 2- G El-Qady, A Mohamed, M Metwaly and M Atya, (2010): Contribution of geophysics for landmines and UXO detection: Case study in the Egyptian environment, in Using robots in hazardous environments: Landmine detection, de-mining and other applications, Woodhead Publishing Limited, ISBN 1 84569 786 3, 712p.
- 3- Mohamed Metwaly (2012): Archaeogeophysical exploration in Egypt: Exploration at Saqqara, LAP LAMBERT Academic Publishing, ISBN 3845472189.
- 4- Metwaly, M. et al., (2018): Estimation of aquifer hydraulic parameters using a surface electrical resistivity measurements, in Aquifers - Matrix and Fluids book, ISBN 978-953-51-5759-5.
- 5- G El-Qady, A Mohamed, M Metwaly (2019): Archaeogeophysics: State of the Art and Case Studies, Springer International Publishing, ISBN 978-3-319-78860-9.
- 6- K. Szokoli, L. Szarka , M. Metwaly, J. Kalmar, E. Pracser , M. K. Baracza, P. Szucs, S. Szalai (2023): Assessment of Landslide by Its Fracture System using Electric Resistivity Tomography and Pressure Probe Method, Current Advances in Geography, Environment and Earth Sciences Vol. 4, 8 June 2022, Page 47-58, <https://doi.org/10.9734/bpi/cagees/v4/1921B>