



Curriculum Vitae

Personal Information

Name: Mona Mohamed Mostafa Omar

Title: Associate Professor of Hydrology

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Address: Hydrology Department, Desert Research Center

Languages: Arabic (Native), English (Second Language)

Field of Specialization

Groundwater, Surface Hydrology, Environmental Studies, and Modeling

Academic Qualifications

- B.Sc. in Science – Faculty of Science, Ain Shams University (1990), Very Good.
- M.Sc. in Environmental Science – Ain Shams University (2011). Thesis: “Study of the hydrological interaction effect between groundwater and El Salam canal, West of Bir El Abd, North Sinai, Egypt.”
- Ph.D. in Environmental Science – Ain Shams University (2017). Thesis: “Hydrologic modeling and environmental management of groundwater resources Wadi El Farigh area, Egypt.”

Career Progression

- Hydrology Specialist (18/06/1991 – 05/11/2012)
- Assistant Researcher (06/11/2012 – 12/12/2017)

- Researcher (13/12/2017 – 20/09/2024)
- Associate Professor Researcher (21/09/2024 – Present)

Research Interests

- Groundwater hydrology: aquifers, recharge sources, renewability, and water quality.
- Hydrogeological studies: water points inventory, aquifer delineation, hydrogeological cross-sections, and groundwater flow.
- Estimation of vertical permeability for recharge evaluation and surface-groundwater interaction.
- Groundwater modeling and prediction using mathematical and AI-based models for sustainable management.
- Watershed studies: morphometric and hydrological analysis, hydrograph preparation, and discharge estimation.
- Flood risk mitigation: planning, water diversion structures, storage dams, and utilization of floodwaters.
- Solutions for waterlogging and soil salinization due to mismanagement of irrigation.
- Pumping test analysis: hydraulic parameters, aquifer productivity, storage capacity, and groundwater sustainability.
- Evapotranspiration estimation for different crops.

Professional Experience

- Application of Artificial Intelligence for groundwater modeling and safe yield estimation.
- AI-based surface runoff and recharge modeling under climate change scenarios.
- Use of geospatial techniques for groundwater assessment and flood risk mapping.
- Permeability tests analysis and hydraulic conductivity mapping.
- Pumping test analysis for hydraulic parameters and aquifer reports.
- Preparing mathematical models for groundwater and surface water to plan reclamation and water management.
- Supervising and training students in hydrology and water resources.
- Preparing technical and scientific reports, workshops, and SPSS-based statistical analysis.

Publications

- Book Chapter: “Groundwater flow model of the Quaternary aquifer: water resources management study in El Khatatba area, Egypt.” In “Novel perspectives of Geography, Environment and Earth Sciences”, 2023.

Published Research Articles

1. Korany, E.A., Himida, I.H., and **Mostafa, M.M.** (2010). “Impact of sea water encroachm groundwater movement before the construction of El Salam canal in El

Qantara-Bir El Abd, North Sinai, Egypt” *Jornal of Environmental Science*, vol.(20), No. (2), ISSN 1110- 0826, 21-46 pp.

2. Korany, E.A., Himida, I.H., Ismail, Y.L., Morsy, S.M. and **Mostafa, M.M.** (2016) “Management of groundwater resources in Wadi El Farigh area using mathematical modeling techniques” *Jornal of Environmental Science*, vol.(33), No. (2), ISSN 1110-0826, 69-93 pp.
3. **Omar M. M.M.** (2023) Integration of Geospatial Techniques for Flood Hazards Detection in Wadi Atfih, Eastern Desert, Egypt. *Middle East J. Appl. Sci.*, Volume13, EISSN: 2706 -7947 ISSN: 2077- 4613 DOI: 10.36632/mejas/2023.13.4.34, Journal homepage: www.curreweb.com, pp 523-537.
4. **Omar M. M.M.** (2022) Groundwater flow model of the quaternary aquifer in El Khatatba area for water resources management. *Egyptian Journal of Pure and Applied Science*, ISSN: 1110-0397, 58(1):51-61
5. **Omar M. M.M.** (2023) Impact of morphometric parameters on surface runoff in Wadi Atfih, Eastern Desert, Egypt. *Journal of Applied Geology and Geophysics V (11)* e-ISSN: 2321-0990, p-ISSN:2321-0982, PP 24– 39. www.josrjournal.org
6. **Omar M. M.M.** and Youssef, N.A. (2024) Methods to Reduce the Risk of Flash Floods for Wadi El Ibrahim, Eastern Desert, Egypt. *Middle East J. Appl. Sci.*, Volume 14 EISSN: 2706 -7947 ISSN: 2077- 4613 DOI: 10.36632/mejas/2024.14.1.8, Journal homepage: www.curreweb.com, pp 110-125.
7. **Omar M. M.M.** and Morad N.A. (2022) Integrated management of the Pleistocene aquifer in Borg El Arab, West Alexandria, Egypt. *Annals of the Geological Survey of Egypt. V (XXXIX)*, ISSN No.: 1110-0435, pp 189 - 200.
8. Ismail Y.L., **Omar M.M.M.**, Mohammed H. M., and Sobhy I. M. (2022) Impact of climatic variations on water resources in Wadi El Dif, South Eastern Desert, Egypt. *Annals of the Geological Survey of Egypt. V (XXXIX)*, ISSN No.: 1110-0435, pp 201-219.

Research Projects & Programs

- Research team member: Sustainable Agricultural Development in North & South Sinai, Egypt.
- Research team member: Sustainable Agricultural Development in New Reclamation Areas of Tor Sinai, South Sinai, Egypt.
- Participation in groundwater assessment for the project: 'Enhancing the productivity of sandy soils while reducing water consumption – Case study: Suez Canal region,' funded by STDF.

Conferences & Workshops

- First Arab Scientific Conference on “Sustainable Management of Land Resources and Water Use” (ACSAD – League of Arab States, 2021).
- IEEE Mediterranean and Middle East Geoscience and Remote Sensing Symposium (2022).
- 4th Geospatial Technologies Conference, Cairo (2019).
- 53rd Annual International Conference on Statistics, Computer Science, and Operations Research (2018).
- International Workshop on Remote Sensing & SEPAL Platform for Land, Water, and Crop Monitoring (AOAD, 2023).
- National Training Course on GIS Fundamentals (AOAD, 2022).
- International Workshop on Mathematical Models: Applications and Statistical Analysis, Ain Shams University (2022).

Diplomas & Training

- Diploma: Application of Artificial Intelligence in Scientific Research (2024), Malaysia.
- Diploma: Certified International Scientific Reviewer (2025), Malaysia.
- Course: SPSS Advanced, 30 hrs (2025), CAPMAS, Egypt.
- Multiple online training courses in Natural Resource Management, Climate Change, Disaster Management, Water Resources Sustainability, International Publishing, Statistical Analysis, AI Applications, and Business Administration.