Curriculum Vitae

First name: Elfatih

Middle name: Mohamed

Surname: Abdel-Rahman

Date and place of birth: November 21, 1971, Juba, Sudan

Nationality: Sudanese

Languages: Arabic (Mother tongue)

English (second language)

Marital status: Married, with three children

Present address: Department of Agronomy, Faculty of Agriculture, University of Khartoum, Khartoum North 13314, P. O. Box 32, Sudan

Telephone (cell): +249 (0) 902926255

E-mail: elfatihabdelrahman@gmail.com; alfatih100@hotmail.com

Academic Qualifications

- B.Sc. (Agric. Hons. First Class) majoring in Agronomy, University of Khartoum, Sudan, 1998.
- M.Sc. (Crop Production), Faculty of Agriculture, University of Khartoum, Sudan, 2003. Title of the Dissertation “The effect of seeding rate on growth and yield of alfalfa (Medicago sativa L.)”.
- Ph.D (Environmental Sciences), Faculty of Science and Agriculture, University of KwaZulu-Natal, South Africa, 2010. Title of the thesis “The potential for using remote sensing to quantify stress in and predict yield of sugarcane (Saccharum spp. Hybrid)”.

Employment

2010 – present: Assistant Professor, Department of Agronomy, Faculty of Agriculture, University of Khartoum, Sudan.
2005 – 2010: On study leave for a PhD study at School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
February 2010 – April 2010: Temporal Lecturer for ENVS 712 Analytical Geographic Information System module that was taught at postgraduate level, School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
December 2009 – May 2010: Postdoctoral fellow, School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
2007 – 2009: Temporal Lecturer for ENVS 316 Geographic Information System (GIS) and Remote Sensing (RS) module that was taught at a third year level, School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
2006 – 2007: Temporal position as a Demonstrator for Geographic Information System (GIS) and Remote Sensing (RS) modules that were taught at both undergraduate and postgraduate levels, School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
2003 – 2005: Lecturer, Department of Agronomy, Faculty of Agriculture, University of Khartoum, Sudan.
1999 – 2003: Teaching Assistant, Department of Agronomy, Faculty of Agriculture, University of Khartoum, Sudan .

Teaching Activities

- Revised and taught cereal crop production, undergraduates module, Faculty of Agriculture, University of Khartoum, Sudan.
- Revised and taught dryland farming, postgraduates (MSc) module, Department of Agronomy, Faculty of Agriculture, University of Khartoum.
- Taught introductory and intermediate statistical analysis using SPSS, training course, Training and Community Service Unit, Faculty of Agriculture, University of Khartoum.
- Taught geographic information system (GIS) and remote sensing (RS), undergraduate module, School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.

- Taught analytical geographic information system, postgraduate module, School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
- Demonstrated for geographic information system (GIS) and remote sensing (RS) modules that were taught at both undergraduate and postgraduate levels, School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
- Taught practical sessions in field crops production, undergraduates modules, Faculty of Agriculture, University of Khartoum, Sudan.
- Taught practical sessions in water relation of plants, undergraduates module, Faculty of Agriculture, Sudan University for Science and Technology, Sudan.

Administrative Activities

- Head: Agricultural Training and Community Development Unit (ATCDU), Faculty of Agriculture, University of Khartoum, Sudan, April 2012 – present.
- Coordinator: Postgraduate studies (Master and PhD candidates), Department of Agronomy, Faculty of Agriculture, University of Khartoum, Sudan, 2010 – present.
- Secretary: Examination committee, Faculty of Agriculture, University of Khartoum, Sudan, 2010 – present.
- Member: Examination committee, Faculty of Agriculture, University of Khartoum, Sudan, 2004 – 2005.
- Coordinator: Seed technology intermediate diploma program, Department of Agronomy, Faculty of Agriculture, University of Khartoum, 2004 – 2005.
- Co-manager: Demonstration Farm, Faculty of Agriculture, University of Khartoum, Sudan, 2003 – 2005.

Supervision of Students

Supervised dissertations of 5 BSc. Students.
Supervised the research work of one MSc student. He is working on the influence of chicken manure and planting method on growth, yield and quality of alfalfa (Medicago sativa L.).

Co-supervising research projects of MSc and PhD candidates, School of Agricultural, Earth and Environmental Sciences (SAEES), University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa.
Supervised dissertations of five BSc (Agric. Honors) projects, Department of Agronomy, Faculty of Agriculture, University of Khartoum, Sudan.
Supervised the research work of one MSc student. He was working on the influence of chicken manure and planting method on growth, yield and quality of alfalfa (Medicago sativa L.), Department of Agronomy, Faculty of Agriculture, University of Khartoum, Sudan.

Membership

The Sudanese Agricultural Engineers Union.
The Sudanese Agricultural Council.
IEEE Geoscience and Remote Sensing Society.

Research Interest

The use of remote sensing (RS) and geographic information system (GIS) techniques for crop and rangelands monitoring, modeling and forecasting:

Within this I specialized in:

- Mapping crop/rangelands areas, modeling growth and predict/estimate yield
- Detecting crop stress (e.g., nutritional status, insect pests damage and disease)
- Simple and multivariate statistical methods

Journals for Which I Act As a Reviewer

- International Journal of Remote Sensing
-
- International Journal of Applied Earth Observation and Geoinformation
-
- Computers and Electronics in Agriculture
-
- Advances in Remote Sensing
-
- Spectroscopy Letters

- South African Journal of Geomatics
- Remote Sensing of Environment
- Journal of Applied Remote Sensing
- National Research Foundation (South Africa)
- South African Geographical Journal
- ISPRS Journal of Photogrammetry and Remote Sensing
- Journal of Electronic Imaging
- Journal of Selected Topics in Applied Earth Observations and Remote Sensing
- Southern Forest: A Journal of Forest Science

Publications

Peer-reviewed journals

1. **Abdel-Rahman**, E. M., Mutanga,O., Odindi, J. Adam,E., Odindo, A., and Ismail, R. *In Review*. A comparison of partial least squares (PLS) and sparse PLS regressions for predicting yield of Swiss chard grown under different irrigation water sources using hyperspectral data. *Computers and Electronic in Agriculture*.
2. 2. Mutanga, O., Adam, E., Adjorlolo, C., **Abdel-Rahman**, E., and Cho, M. *In Review*. Evaluating the robustness of models developed from field spectral data in predicting African grass foliar nitrogen concentration using Worldview-2 image as independent test dataset. *International Journal of Applied Earth Observation and Geoinformation*.
3.
4. 3. Elhadi, E., Mutanga, O., Odindi, J., and **Abdel-Rahman**, E. M. *Accepted*. Land use/cover classification in a heterogeneous coastal landscape using RapidEye imagery: evaluating the performance of random forest

and support vector machines classifiers. *International Journal of Remote Sensing.*

5.
6. 4. Adam, E., Mutanga, O., **Abdel-Rahman**, E. M., and Ismail, R. 2014. Estimating standing biomass in papyrus (*Cyperus papyrus* L.) swamp: exploratory of in situ hyperspectral indices and the random forest regression. *International Journal of Remote Sensing*, 35, 693–714.
7. **Abdel-Rahman**, E. M., Mutanga, O., Adam, E., and Ismail, R. 2014. Detecting *Sirex noctilio* grey-attacked and lightning-struck pine trees using airborne hyperspectral data, random forest and support vector machines classifiers. *ISPRS Journal of Photogrammetry and Remote Sensing*,88, 48–59.
8. **Abdel-Rahman**, E. M., Way, M., Ahmed, F., Ismail, R., Adam, E., 2013. Estimation of thrips (*Fulmekiola serrata Kobus*) density in sugarcane using leaf level hyperspectral data. *South African Journal of Plant and Soil*, 30, 91–96.
9. Eltegani, A. B. A. and **Abdel-Rahman**, E. M., 2013. Impact of chicken manure and sowing methods on alfalfa (*Medicagosativa* L.) growth, forage yield and some quality attributes. *International Journal of Sudan Research*, 3, 35–54.
10. **Abdel-Rahman**, E. M., Ahmed, F. B. and Ismail, R., 2013. Random forest regression and spectral band selection for estimating sugarcane leaf nitrogen concentration using EO-1 Hyperion hyperspectral data. *International Journal of Remote Sensing*,34, 712–728.
11. **Abdel-Rahman**, E. M., Abu Suwar, A. O. 2012. Effect of seeding rate on growth and yield of two alfalfa (*Medicago sativa* L.) cultivars. *International Journal of Sudan Research*, 2, 141–154.
12. **Abdel-Rahman**, E. M., Ahmed, F. B., van den Berg, M. and Way, M. J., 2010. Potential of spectroscopic data sets for sugarcane thrips (*Fulmekiola serrata* Kobus) damage detection. *International Journal of Remote Sensing*,31, 4199–4216.
13. **Abdel-Rahman**, E. M., Ahmed, F. B. and van den Berg, M., 2010. Estimation of sugarcane leaf nitrogen concentration using*in situ* spectroscopy. *International Journal of Applied Earth Observation and Geoinformation*, 12S,S52–S57.
14. **Abdel-Rahman**, E. M. and Ahmed, F. B., 2008. The application of remote sensing techniques to sugarcane (*Saccharum* spp. Hybrid) production: a review of the literature. *International Journal of Remote Sensing*, 29, 3753-3767.

Chapters in books

1. Mohamed, M. S., **Abdel-Rahman, E. M**, Siddig, K. H. A., Ibrahim, I. S. and Csaplovics, E., *In Press*. Land Use and Land Cover Changes in

Northern Kordofan State of Sudan: A Remotely-Sensed Data Analysis. In: *River Nile Basin: Ecohydrological Challenges, Climate Change, and Hydropolitics*. A. M. Melesse, W. Abtew and S. G. Setegn (eds). Springer-International Publisher Science, NY, USA.

2.

Abdel-Rahman, E. M., Ahmed, F. B. and Ismail, R., 2012. Random forest regression for sugarcane yield prediction in Umfolozi, South Africa based on Landsat TM and ETM+ derived spectral vegetation indices. In *Sugarcane: Production, Cultivation and Uses*. J. F. Goncalves and K. D. Correia (eds). NOVA Science Publishers, Inc. Hauppauge NY, USA, pp: 257-284

1. **Reviewed conference proceedings**2. **Abdel-Rahman**, E. M., van den Berg, M. Way, M. J., and Ahmed, F. B., 2009. Handheld spectrometry for estimating thrips (*Fulmekiola serrata*) incidence in sugarcane. *Proceedings of IEEE International Geoscience and Remote Sensing Symposium*, IV-268 – IV-271.4. **Abdel-Rahman**, E. M., Ahmed, F. B., van den Berg, M. and Way, M. J., 2008. Preliminary study on sugarcane thrips (*Fulmekiola serrata*) damage detection using imaging spectroscopy. *Proceedings of South African Sugar Technologists' Association*, 81, 287–289.
2. 3. **Abdel-Rahman**, E. M., Ahmed, F. B. and van den Berg, M., 2008. Imaging spectroscopy for estimating sugarcane leaf nitrogen concentration. *Proceedings of SPIE Remote Sensing for Agriculture, Ecosystems, and Hydrology X Conference*, V-1 – V-12.
3. 1. **Abdel-Rahman**, E. M., van den Berg, M., Way, M. J., Ahmed, F. B. and Sewpersad, C., 2009. Using spectroscopic data sets to predict numbers of thrips (*Fulmekiola serrata*) in sugarcane. *Proceedings of South African Sugar Technologists' Association*, 82, 441– 445.

Workshops and Seminars

1. **Abdel-Rahman**, E. M., 2012**. The Utility of Remotely-Sensed Data in Dry Lands Agriculture: A Synthesis. Desertification Research Institute, Sudan and Tottori University, Japan Joint International Symposium on Research and Development in Dry land**, Khartoum, Sudan.
2. **Abdel-Rahman**, E. M., Ahmed, F. B., and van den Berg, M., 2009. **Remote sensing of sugarcane agriculture, Reunion Island's Season in South Africa: Remote Sensing a tool for Sustainable Development in South Africa and**

Indian Ocean Workshop. School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.

3. 3. **Abdel-Rahman**, E. M., 2009. **Estimation of sugarcane yield using Landsat TM and ETM+ data sets. South African Sugarcane Research Institute (SASRI),** Postgraduate Symposium, Mount Edgecombe, Durban, South Africa.
4. 4. **Abdel-Rahman**, E. M., 2008. **Estimation of sugarcane leaf nitrogen concentration using in situ spectroscopic dataset.** Faculty of Science and Agriculture Postgraduate Research Symposium, University of KwaZulu-Natal, Pietermaritzburg, South Africa.
5. 5. **Abdel-Rahman**, E. M., 2008. **Quantitative assessments of sugarcane growth, yield and factors of stress using remote sensing techniques.** South African Sugarcane Research Institute (SASRI), Postgraduate Symposium, Mount Edgecombe, Durban, South Africa.
6. 6. **Abdel-Rahman**, E M., 2007. **Attended GISSA Conference, "GIS the Backbone of Service Delivery"**, Durban, South Africa.
7. 7. **Abdel-Rahman**, E. M., 2005. **Attended AfricaGIS Conference, Johannesburg,** South Africa.
8. **Abdel-Rahman**, E. M., 2013. Rainwater harvesting for agricultural production using GIS and remote sensing. Connections and Follows, Brown International Advanced Research Institutes. Brown University, USA.
9. **Abdel-Rahman**, E. M., 2012. The Utility of Remotely-Sensed Data in Dry Lands Agriculture: A Synthesis. Desertification Research Institute, Sudan and Tottori University, Japan Joint International Symposium on Research and Development in Dry land, Khartoum, Sudan.
10. **Abdel-Rahman**, E. M., Ahmed, F. B., and van den Berg, M., 2009. Remote sensing of sugarcane agriculture, Reunion Island's Season in South Africa: Remote Sensing a tool for Sustainable Development in South Africa and Indian Ocean Workshop. School of Environmental Sciences, University of KwaZulu-Natal, Durban, South Africa.
11. **Abdel-Rahman**, E. M., 2009. Estimation of sugarcane yield using Landsat TM and ETM+ data sets. South African Sugarcane Research Institute (SASRI), Postgraduate Symposium, Mount Edgecombe, South Africa.
12. **Abdel-Rahman**, E. M., 2008. Estimation of sugarcane leaf nitrogen concentration using *in situ* spectroscopic dataset. Faculty of Science and Agriculture Postgraduate Research Symposium, University of KwaZulu-Natal, Pietermaritzburg, South Africa.
13. **Abdel-Rahman**, E. M., 2008. Quantitative assessments of sugarcane growth, yield and factors of stress using remote sensing techniques. South African Sugarcane Research Institute (SASRI), Postgraduate Symposium, Mount Edgecombe, South Africa.

14. **Abdel-Rahman**, E M., 2007. Attended GISSA Conference, “GIS the Backbone of Service Delivery”, Durban, South Africa.
15. **Abdel-Rahman**, E. M., 2005. Attended AfricaGIS Conference, Johannesburg, South Africa.

References

1. **Dr. Maurits van den Berg** (Maurits.vandenBerg@pbl.nl), the Netherlands Environmental Assessment Agency, Bilthoven, The Netherlands.
2. **Prof. Awad Osman Abusuwar** (Abusuwar@yahoo.com), Faculty of Meteorology, Environment and Arid Land Agriculture, Kind Abdulaziz University, Jeddah, Saudi Arabia.
3. **Prof. Tageldin Elshaikh Musa Hago** (tageldeenhajo@yahoo.com), Department of Agronomy, Faculty of Agriculture, University of Khartoum.
4. **Dr. Mahmoud Fadel Mula Ahmed** (mfahmed@yahoo.com), Department of Agronomy, Faculty of Agriculture, University of Khartoum.