

PHILIP FROST

PERSONAL DETAILS

Date Of Birth	20 July 1976
Nationality	South African
ID Number	7607205001089
Gender	Male
Marital Status	Married
Drivers License	Yes, code 08
Bilingualism	Yes, English and Afrikaans
Home Language	Afrikaans
Health	Excellent

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PROFESSIONAL STATUS

Tertiary Qualifications

- *University of Pretoria*

BSc Geography & Botany	1995 - 1999
BSc GIS (Honours) UNIGIS	1999 – 2001

- *University of Johannesburg*

MSc Geography (Remote Sensing)	2005 - 2007
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Work Experience

Technical Assistant ARC-ISCW	1999 (January - May)
Junior Researcher ARC-ISCW	1999 (Apr) – 2001
Researcher ARC-ISCW (Remote Sensing Project leader)	2001 – 2002
Remote Sensing Product developer (CSIR – SAC)	2002 – 2005
Remote Sensing Specialist (CSIR – Meraka Institute)	2006

2.1 Job Functions

Remote Sensing Specialist

- Developed fully automated NOAA processing chain (2001) that could provided calibrated data for the entire Southern Africa
- Finished processing of NOAA-AVHRR data in 2002, making it the only processed NOAA archive of Southern Africa in the world.
- Produced the first 1km vegetation index for the last 16 years of Southern Africa.
- Helped to operationalize the Umlindi system on AGIS (<http://www.agis.agric.za/agisweb/umlindi.html>)
- Started the first satellite based active fire detection system in partnership with the Joint Research Center in Ispra Italy through the World Fire Web (WFW) in Southern Africa.
- Initiated an independant Kruger Fire Disaster investigation that made use of AVHRR satellite data.. Developed fire maps that identified the location of initial fire within 2 days.
- Developed the first African satellite based fire detection tool: Advanced Fire Information System (AFIS) currently used by Eskom and numerous other organisations in Southern Africa
- Part of the SA-Belgium team working on the inter calibration of the NOAA AVHRR, SPOT VEG and MODIS 20 year vegetation index archive.
- Project leader of the Wide Area Monitoring Information System (WAMIS) project.
- Developed the first Meteosat Second Generation (MSG) fire algorithm

- Started with the idea of MODIS fire maps on SABC news

2.2 Overseas Work

Poland

May – Jun 2001

Fieldwork in the Biebrza National Park with the “Institute of Geodesy and Cartography”. Crop yield assessment using NOAA-AVHRR and SAR data.

USA

July 2002

Helped with the integration of the processed NOAA AVHRR data into the GLO-PEM model of the University of Maryland (UMD) for the production of Net Primary Production and Rain Use Efficiency products in Southern Africa.

Belgium

Febr 2003

Contributed in the development of the NOAA AVHRR processing chain at VITO in Mol, Belgium.

2.3 Overseas Visits

Belgium (VITO) (SPOT Vegetation processing unit)	June 2001
Germany (GAF)	June 2001
Italy (JRC) (World Fire Web)	June 2001
Poland	May 2001
USA (UMD and NASA)	July 2002
Belgium (VITO)	Febr 2003
Germany (Eumetsat)	March 2004
Belgium (VITO)	June 2005
Spain (EASEL)	June 2005
Australia (CSIRO)	June 2006

2.4 Awards

Kynoch Prize

Best paper presented

South African Sugar Technologists Association – August 2000

“Application of Remote Sensing technology in the SA Sugar Industry”

2.5 Publications

1. P.E. Frost, H. Vosloo, D. Davis³, S. Kumar³, J. Decloites⁴, & J. Schmaltz⁴, Development of an Advanced Fire Information System for Southern Africa De la Riva, J., Pérez-Cabello, F. & Chuvieco, E. (Eds) 2005 Proceedings of the 5th International Workshop on Remote Sensing and GIS Applications to Forest Fire Management: Fire Effects Assessment: 161-166 Universidad de Zaragoza. ISBN: 84-96214-52-4

2. P. FROST, H. VOSLOO, Providing satellite-based early warning of fires to reduce fire flashovers on South Africa's transmission lines. *Life in a fire-prone environment: translating science into practice. Proceedings of the 10th*

Biennial Australasian Bushfire Conference 2006. Brisbane, 6-9 June 2006.
Brisbane: Griffith University

P Frost, H Vosloo, Protecting Transmission, *Quest: Science for South Africa*, Volume 2, Nr 3, 2006, p 6-7

P Frost, H Vosloo, Fighting fire with technology, *Afgriland*, July/August, 2006, Vol 50 Nr 4.

Roy, D.P., Trigg, S.N., Bhima, R., Brockett, B., Dube, O., Frost, P., Govender, N., Landmann, T., Le Roux, J., Lepono, T., Macuacua, J., Mbow, C., Mhwandangara, K., Mosepele, B., Mutanga, O., Neo-Mahupeleng, G., Norman, M., Virgilo, S., 2006, The utility of satellite fire product accuracy information - perspectives and recommendations from the southern Africa fire network, *IEEE Transactions on Geoscience and Remote Sensing*, 44:1928-1930.

5. "Wessels K.J., Prince S.D., Zambatis N., Macfadyen S., Frost P.E. and D. VanZyl (accepted, in revision) Relationship between herbaceous biomass and 1km² Advanced Very High Resolution Radiometer (AVHRR) NDVI in Kruger National Park, South Africa. *International Journal of Remote Sensing* (in print)

6. " Wessels K.J., Prince S.D., Malherebe J. Frost, P.E. Land degradation monitoring using remotely sensed estimates of vegetation production: controlling for inter-annual variation of rainfall in South Africa. *Global Change Biology*.

7. "Wessels K.J., S.D. Prince, Frost P.E., van Zyl D. (2004) Assessing the effects of human-induced land degradation in the former homelands of northern South Africa with a 1km AVHRR NDVI time-series. *Remote Sensing of Environment*, 91, 47-67.

8. Phenological description of natural vegetation in southern Africa using remotely-sensed vegetation data
Hoare, David¹* & Frost, Phillip²
Applied Vegetation Science 7: 19-28, 2004
© IAVS; Opulus Press Uppsala

9. Flooding Patterns of the Okavango Wetland in Botswana between 1972 and 2000
Jenny M. McCarthy, Thomas Gumbricht, Terence McCarthy, Philip Frost, Konrad Wessels and Frank Seidel
Royal Swedish Academy of Sciences Ambio Vol. 32 No 7, Nov. 2003

10. Remote sensing to detect sub-surface peat fires and peat fire scars in the Okavango Delta, Botswana.
Gumbricht, T., T. McCarthy, J. McCarthy, D. Roy, P.E. Frost and K. Wessels. (2002). *South African Journal of Science*, 98: 351-360

11. Wildland Fire management handbook for Sub-Saharan Africa
2004 Global Fire Monitoring Center
comPress

12. Sugar Cane crop yield estimation using NOAA AVHRR satellite imagery
Abstract: Proceedings, International Remote Sensing Conference 2000

13. Roy, D.P., Trigg, S.N., Bhima, R., Brockett, B., Dube, O., Frost, P., Govender, N., Landmann, T., Le Roux, J., Lepono, T., Macuacua, J., Mbow, C., Mhwandangara, K., Mosepele, B., Mutanga, O., Neo-Mahupeleng, G.,

Norman, M., Virgilo, S., The utility of satellite fire product accuracy information - perspectives and recommendations from the southern Africa fire network, IEEE Transactions on Geoscience and Remote Sensing, Land Product Validation Special Issue.

D Davies, PE Frost, HF Volsoo, Suresh Santhana Vannan. Near real-time fire alert system in South Africa: from desktop application to mobile service. DIS 2008 Cape Town.

2.6 Paper reviews

Reviewed paper :

An Improved Method Based on MODIS Contextual Algorithm for Small and Cool Fire Detection: A preliminary study in the southeastern United States,

Journal: Remote Sensing of the Environment

Manuscript number: RSE-D-05-00566 (Dec 2005)

2.8 Media Interviews

TV

2004 – Carte Blanche: Kruger Park Fire Disaster

2005 – Morning live: MODIS system inauguration

2005 – AgriTV: MODIS system

Radio

2005 – MODIS system Inauguration

RSG, SAFM, Jacaranda, Radio Ripple, Radio Pretoria

2005 – AFIS

RSG, SAFM

2.7 Professional bodies

Geo-Information Society of South Africa member

2.7 Networks

Contact person for the Southern African Fire Network
(SAFNET)

2.8 Courses

Introduction to Arc View	2000
Advanced Arc View	2000
Access	2001
ERDAS	2001
ENVI	2002
MODIS Product development	2002
Project Management	2003
OO modeling	2004
Advanced Remote Sensing	2005