

PERSONAL INFORMATION

Mohamed Babiker

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POSITION

RESEARCH SCIENTIST in Sea ice and ocean remote sensing group

WORK EXPERIENCE

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- 2007 **RESEARCH SCIENTIST – Nansen Environmental and Remote Sensing Centre**
Satellite remote sensing, analysis, project reporting publication and proposal preparation
- 2004-2007 **SCIENTIST (POST DOC) – Nansen Environmental and Remote Sensing Centre**
Post Doc on the RAPID (NFR) Greenland Ice sheet Project and other project, Geographic Information System (GIS) analysis and remote sensing image analysis
- 2001-2004 **PHD STUDENT – Nansen Environmental and Remote Sensing Centre and Geological Institute, University of Bergen**
NFR project Hydrological and Hydro-geological investigation in the Red sea area, Sudan
- 1999-2001 **RESERACH ASSISTANT – Nansen Environmental and Remote Sensing Centre**
Working in different projects downloading and processing remote sensing data (satellite images) from different sensors using geographical information system for analysis
- 1992-1995 **Head of water department, Norwegian Red Cross /Sinkat Development Project**
lead the water resource development activities in Sinakt district, planning implementation and follow up
- 1994 **Project Co-ordinator, Oxfam, Norwegian Red Cross and Sudanese Environmental Conservation Society**
Coordinating project in Erkowit, Red Sea Hills, Sudan area for soil erosion control by building check dams
- 1991-1992 **Administration and finance officer, Red Cross and Red Crescent Societies**
Responsible from the relief operation in Sinkat district, Sudan, during the drought period of 1991 in the Sahel zone

EDUCATION AND TRAINING

- 2001-2004 **PhD in Hydrogeology**
 University of Bergen (Norway).
 To investigate and combine Hydrological parameters derived from DEM with hydrogeological parameters extracted from high resolution satellite data, analysed in GIS to understand their effect on groundwater in arid land. case study from Red Sea Hills, Sudan.
 Ph D Project Funded by: The Research Council of Norway (NFR).
- 1999-2001 **Master**
 University of Bergen (Norway).
 Master in "Hydrogeology and Environmental Geology", Thesis "Water resources Assessment in arid land using Remote Sensing, Sinkat District, Red Sea Hills, Sudan
- 1984-1989 **Bachelor**
 University of Khartoum
 BSc. in science main Geology and Chemistry

PERSONAL SKILLS

Mother tongue(s) Arabic

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
Norwegian	B2	B2	B2	B2	B1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
 Common European Framework of Reference for Languages

Communication skills ▪ good communication skills

Organisational / managerial skills ▪ Project manager of several projects for ESA, European commission
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Job-related skills ▪ data processing: currently process Sentinel 3 products (chl- concentration and SST) with SAR data (Sentinel 1, and Radarsat 2) to study ocean features.
 ▪ Developing algorithm for sea ice product based one remote sensing data
 ▪ data analysis: using Geographical information system and make webinar to users for Level3 and Level4 products for sea ice.

Computer skills ▪ command of Linux environment
 ▪ command of Microsoft Office™ tools
 ▪ command of script/programming in python
 ▪ command in Geographic Information System softwares

Driving licence ▪ B

ADDITIONAL INFORMATION

Notable fieldwork and cruise

- 1999 Greece** Member and acting head of the geological team. Norwegian Arcadia Survey Project, using GPR (Ground Penetration Radar) for geological mapping and mapping sub-surface structure
- 2009 Brazil, SP, Ilhabella** Brazilian Norwegian Workshop on Forest and Marine Monitoring (The Norwegian Amazon Fund), organized by the Norwegian Space Centre and Brazilian National Institute for Space Research
- 2011, Fram Strait field experiment** The field experiment supports the following projects: Acoustic technologies for observing the internal of the Arctic Ocean (ACOBAR). EU project, Waves-in-Ice Forecasting for Arctic Operators (WIFAR) NFR project and Arctic Climate and Environment of the Nordic Seas and the Svalbard –Greenland Area (AWAKE) NFR project, Norway and Poland collaboration. Two ships are involved in the field experiment: the icebreaker KV Svalbard and the open ocean ship RV Håkon Mosby. Main responsibilities: planning, ordering, downloading and analysis of Satellite data (Radarsat2 and ENVISAT images + optical images) in near real time to assist cruise activities also involve in collecting in-situ ice field data
- 2012, Fram Strait field experiment** This cruise plan is for the Waves-in-Ice Forecasting for Arctic (WIFAR) Operators component of Fram Strait field experiment 2012 is carried out from the 23 August 30 August 2012. The main purpose of the cruise is to measure ice thickness and properties for validation of models and satellite data, deployment of a drifting integrated ice station (IIS) (waves, meteorology, and acoustics), and if possible, recovery of a drifting advanced ice tethered platform (AITP). Main responsibilities: planning, ordering, downloading and analysis of Satellite data (Radarsat2 and optical images) in near real time to assist cruise activities
- 2018, Van Mijenfjorde, Svalbard** Training students in master level course at the university centre in Svalbard for collecting sea ice data.

Publications

- Jeong-Won Park, Anton Andreevich Korosov, **Mohamed Babiker**, Joong-Sun Won, Morten Wergeland Hansen, and Hyun-Cheol Kim, 2020 "Classification of sea ice type in Sentinel-1 synthetic aperture radar images", The Cryosphere, 14, 2629-2645
- Park J.-W., Won J.-S., Korosov A., **Babiker M.**, Miranda N., Textural Noise Correction for Sentinel-1 TOPSAR Cross-Polarization Channel Images, IEEE TGRS, 57(6), 20191565
- Babiker, M.**, "Influences of sea ice on ships routes patterns in the Kara Sea Using AIS Data and SAR images" ESA Living Planet Symposium, May 2019, Milan, Italy
- Park, J.-W., Korosov, A., **Babiker, M.**, Sandven, S., Won, J.-S., Efficient Thermal Noise Removal for Sentinel-1 TOPSAR Cross-Polarization Channel. IEEE Transactions on Geoscience and Remote Sensing 2018; Volume 56(3). pp. 1555
- Zakhvatkina, N., Korosov, A., Muckenhuber, S., Sandven, S., **Babiker, M.**, Operational algorithm for ice-water classification on dual-polarized RADARSAT-2 images. The Cryosphere 2017; Volume 11(1), pp. 33-46
- Johannessen, O.M., **Babiker, M.**, Miles, M.W., 2014, Unprecedented retreat in a 50-year observational record for Petermann Glacier, North Greenland, Atmos. Oceanic Sci. Lett. 2013; Vol. 6(5)
- Babiker, M.**, application of SAR for ice navigation in the Northern Sea Route chapter in Johannessen, O.M. et al., 2006, Remote Sensing of Sea Ice in the Northern Sea Route - Studies and Applications, edited Book, Nansen Centers Polar Series no.4, Springer Praxis, No. 4
- Babiker, M.**, Korosov, A., Park, J.-W., (2017) "Sea ice type dynamics in the Arctic based on Sentinel-1 Data", EGU assembly 2017

Sagen, Hanne; Worcester, Peter; Dzieciuch, Matthew; Geyer, Florian; Sandven, Stein; **Babiker, Mohamed**; Beszczynska, Agnieszka; Dushaw, Brian; Cornuelle, Brian. Resolution, identification, and stability of broadband acoustic arrivals in Fram Strait. *Journal of the Acoustical Society of America* 2017 ;Volume 143.(3)

Sagen, H., Tengesdal, H. K., Babiker, M. and Tollefsen, D. 2013, The marine soundscape of the Fram Strait. *The Journal of the Acoustical Society of America* vol. 134 issue p. 4178.

Geyer, F., Sagen, H., Hope, G., **Babiker, M.** and P. F. Worcester, "Identification and quantification of soundscape components in the marginal ice zone," *J. Acoust. Soc. Am.* 139, 1873–1885 (2016)

Sagen, H., Worcester, P. F., Sandven, S., Beszczynska-Moeller⁴, A., Dzieciuch, M. A., Geyer, F., Dushaw, B. and **Babiker, M.**, 2013, A comparison of measured and predicted broadband acoustic arrivals in Fram Strait, *The Journal of the Acoustical Society of America* vol. 134 issue p. 4000.

Babiker, M. and Sandven, S. (2013): Iceberg detection in the Barents and Kara Sea using high-resolution optical and SAR images, 14th Meeting of the International Ice Charting Working Group (IICWG), October 21-25, 2013 – Reykjavik, Iceland

Johannessen, O, **M. Babiker, M.**, Miles, M, W. 2011 "Petermann Glacier, North Greenland: Massive Calving in 2010 and Past Half Century" *Cryosphere Discussions*

S Sandven, K Kloster, F Geyer, D Dumont, **M Babiker**, 2010, Sea ice drift and area flux in the Fram Strait from SAR data Ice drift profiles across the Fram Strait, In proceeding of: IPY Oslo Science Conference, Volume: 1550

Babiker, M. et al. 2009. Satellite images for the OIL-IN-ICE experiment in the Barents Sea in May 2009. NERSC technical report no. 305

Alexanderov V. Y, V.A. Volkov S. Sandven, **M. Babiker**, K. Kloster: Detection of Arctic iceberg on the base of satellite information. *Earth Research from Space* No. 3 pp. 44-55, 2008

Babiker, M; Miles, M; Johannessen, O; Sandven, S. 2008 "Solid-ice flux indicators from Petermann glacier, north Greenland: interannual to decadal variability". EGU General Assembly 2008. Vienna, Austria, 13 – 18 April 2008

Sandven S., **Babiker M.** and Kloster K. "Iceberg Observation in the Barents Sea by Radar and Optical Satellite images", *Envisat Symposium, Montreux Switzerland* 23-27 April 2007

Johannessen O.M. et al.,2006, *Remote Sensing of Sea Ice in the Northern Sea Route - Studies and Applications*, edited Book, Nansen Centers Polar Series no.4, Springer Praxis, No. 4.

Sandven, S., **M. Babiker**, K. Kloster: Project for Hydro Oil and Energy 2006: Analysis of high-resolution satellite images for iceberg detection in the Barents Sea. NERSC Technical report no. 275, 2006.

Babiker, M. and Gudmundsson, A., 2004. The effects of dykes and faults on groundwater flow in an arid land: the Red Sea Hills, Sudan. *J. Hydrology*, 279, 256-273

Babiker, M. and Gudmundsson, A., 2004. Geometry, structure and emplacement of mafic dykes in the Red Sea Hills, Sudan. *Journal of African Earth Sciences*, 38, 279-292

Babiker, M. and Gudmundsson, A., 2003. Conceptual model of groundwater flow in arid land based on satellite images and digital elevation model. The 30th International Symposium on Remote of Environment, Honolulu, Hawaii November 10-14, 2003