

ISWI School Report 28 Oct – 4 Nov 2010, Bahir Dar, Ethiopia

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Topics Covered

1. Space physics

The Sun and the dynamo process

The solar wind, magnetosphere and ionosphere system

Modeling the equatorial ionosphere Neutral atmospheric dynamics

- 2. Computational space physics
 Typical numerical methods used in space physics
 Numerical investigations of MHD equations
- 3. Modern data analysis and interpretation methods

Typical time series analysis in space physics
Fourier and wavelet transforms
Bayesian statistical inversion theory and its
application in ionospheric tomography

Introduction to Neural networks

4. Scientific instruments for space exploration
Basic working principle of a magnetometer and calibration issues
Constructing VLF receivers and calibration Building GPS receivers for ionospheric studies, calibrations, bias
Fundamentals of ionospheric radar

5. Programming in Open source
How to use R programming language
(introduction)
How to use Python Programming language
(introduction)

Recommendation from students for future schools:

Computer Language: IDL, GDL, Matlab

Access to literature, lecture notes

Lecturers

1.	Prof Mark Moldwin	Michigan University, USA
2.	Dr. Patricia Doherty	Boston College, USA
3.	Prof Kiyohumi. Yumoto	Kyushu University, Japan
4.	Dr. Anthea Coster	Massachusetts Institute of Technology(USA)
5.	Dr. Susan Skone	University of Calgary, Canada
6.	Dr. Christian Koch	German Aerospace Center, Germany
7.	Dr. Natchimuthuk Gopalswamy	Goddard Space Flight Center, NASA, USA
8.	Dr.Ron Caton	Air Force Research Laboratory, USA
9.	Dr.Keith Groves	Air Force Research Laboratory, USA Canceled
10	. Dr.Endawoke Yizengaw	Boston College, USA
11	. Dr.Luigi Caraolo	ITCP, Italy
12	. Dr.Terry Bullet	Colorado university, USA Canceled
13	. Dr.Bayile Damtie	Bahir Dar University, Ethiopia
14	. Dr.Gizaw Mengistu	Addis Ababa University, Ethiopia
15	. Dr. Babatunde Rabiu	Federal University of Technology, NIGERIA

- Algeria 1
- Cameroon 1
- D. Rep. of Congo 1
- Ethiopia 22
- Ivory Cost 2
- Kenya 2
- Madagascar 1
- Malawi 1
- Nigeria 4
- Rwanda 1
- South Africa 1
- Sudan 1
- Tanzania 1
- Uganda 3
- Zambia 1
- Total participants: 43

Students

43 Students from 15 African countries Attended the ISWI School in Bahir Dar.

The largest number was from the host Country – Ethiopia

Post-School

- CDs of lectures given to the students
- Potential short-term training suggested
- Lectures to be put on ISWI website (iswi-secretariat.org)

Participants



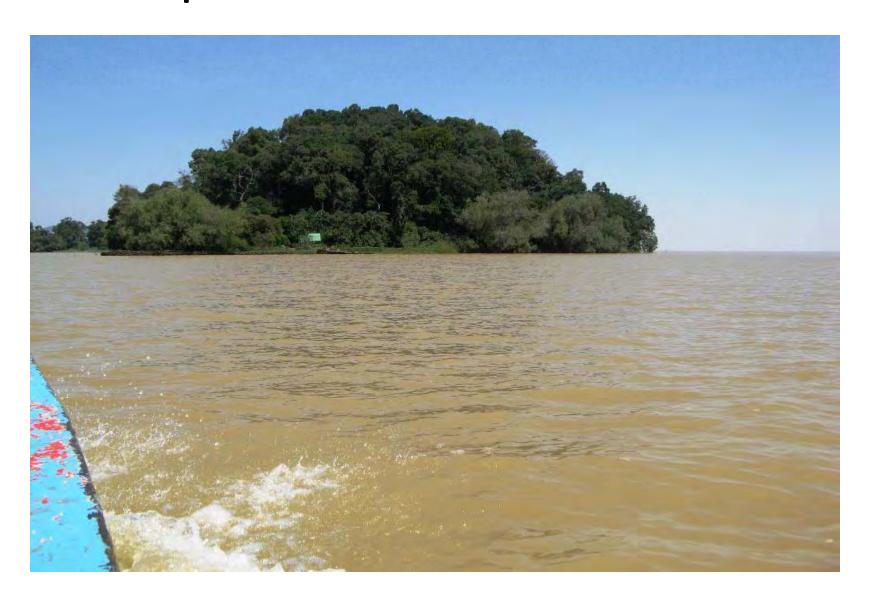
Installation of VHF Receiver



Lab Visit, Bahir Dar University



Field Trip: Lake Tana & Monasteries



Sponsors

- The school was hosted by the Washera Geospace and Radar Science Laboratory of Bahir Dar University, Bahir Dar Ethiopia
- Sponsored by ICTP, Boston College, Oulu University, Kyushu University, Bahir Dar University, ISWI/NASA, AFOSR, and Addis Ababa University

