Joint ICTP-IAEA Workshop on Vulnerability of Energy Systems to Climate Change and Extreme Events

19 - 23 April 2010

ICTP Overview

Tuniz Claudio

ICTP
Trieste
Italy
Quick facts

> Founded in 1964 by Nobel Laureate Abdus Salam
> Provides training to improve scientific capacity in developing countries
> Supports in-house staff of world-class physicists and mathematicians
> Sponsored by tripartite agreement between Italy, UNESCO and IAEA
Organization

- A distinguished Scientific Council sets scientific policies and a Steering Committee sets fiscal policies.

- Some base funding is provided by UNESCO and IAEA, specific programmatic funding by other sources, and $\approx 82\%$ of the Centre’s budget comes from Italy.

- The Centre is connected to many institutions within Trieste, within Europe, and within developing countries.
ICTP visiting scientists

- More than 100,000 visits since 1970
- 184 countries represented
- 20% of ICTP visiting scientists are women
Research at ICTP

- Condensed Matter and Statistical Physics
- Earth System Physics
- High Energy, Cosmology and Astroparticle Physics
- Mathematics
- Applied Physics
- Multidisciplinary Laboratory
Example of ESP Networking: The Regional Climate research NETwork, RegCNET

Collaborative research projects

Use of ICTP model tools and datasets

Workshops at ICTP and off-site

E-mail list (over 300 p.)

Interactions with other international programs

Visitor program

Regional Modeling

Weather Prediction

Seasonal Prediction

Climate Change

Storms

Flood

Drought

Water Resources

Energy

Agriculture

Landuse Change

Pollution

Health

Fisheries

Ecosystems
Research at ICTP

- 27 staff scientists, plus 85 post docs, staff associates, long-term visitors

- Research support
  - ICTP Library holdings include 64,000 books, 450 journal subscriptions and 3,500 e-journals
  - State-of-the-art computer equipment and support
  - Publications and printing unit
  - Open access to e-journals, digital lectures

- African Physical Review
ICTP training and education

> Provides training and skills to scientists from developing countries
> Organises more than 60 conferences/workshops each year
> Welcomes 4000 scientists from about 130 nations each year
> Attracts an additional 2000 scientists/year through hosted activities
ICTP training and education

> Pre-PhD programmes

> Diploma Programme

> ICTP/IAEA Sandwich Training Educational Programme

> Joint Ph.D. programme with University of Trieste

> ICTP/University of Trieste Laurea Magistralis
ICTP training and education

> Scientific career support:

> Associate and Federation Schemes

> Training and Research in Italian Laboratories

> ICTP visitors' programme

> Training at Elettra Synchrotron Light Laboratory

> SESAME Programme
ICTP training and education

Spotlight: Associateship Scheme

Geographical Distribution of Associate Members, 2008

- Africa
- Asia
- Europe
- Latin America

No. of appointments
Female
No. of Visits

ICTP Public Information Office I 2010
ICTP training and education

> Office of External Activities

> Supports scientific activities in developing countries

> PhD courses

> Scientific meetings

> Regional networks

> Affiliated centres
ICTP Training and Education

Office of External Activities

Geographical distribution of programmes

- Europe: 6 scientific meetings
- Asia: 19 scientific meetings
- Latin America: 17 scientific meetings
- Africa: 23 scientific meetings
ICTP Prizes and Awards

› Dirac Medal
› ICTP Prize
› ICO/ICTP Gallieno Denardo Award
› Ramanujan Prize
Present ICTP IAEA Collaboration

- Workshops/Scientific events [about 10-15 per year]
- PhD training for Agency Fellows (STEP)
- Participation of IAEA staff in ICTP events
- Placement of IAEA Fellows in Italy (2010)
Summary of ICTP-IAEA joint activities, 2005-2009

ICTP-IAEA joint activities by year:
9 in 2005 and 2006
8 in 2007
10 in 2008
13 in 2009
To increase cooperation

Joint studies and research with involvement of:

- ICTP Associates and Post-Doctoral Fellows
- ICTP Affiliated Centers and Networks
- ICTP Research Staff in IAEA CRPs
Summary topics of common interest (cont'd)

- Fusion/Plasma Research
  - Theory, data, plasma lab

- General
  - Management of knowledge
  - ICT technologies/GRID computing
  - Remote access/Virtual laboratory
Topics of common interest

> Nuclear and radiation analyses
  > Advanced x-ray/neutron/ion microscopies
  > Accelerator applications
  > Portable x-ray/neutron analytical systems

> Interdisciplinary programmes
  > Marine sciences (climate modelling, advanced analyses)
  > Environment (modelling impacts and risks)
  > Energy  new!
SELECTED 2010 ACTIVITIES

> International Conference on Human Resource Development for Introducing and Expanding Nuclear Power Programmes (Abu Dhabi, United Arab Emirates, 14 to 18 March 2010)

> ICTP-IAEA Workshop on Vulnerability of Energy Systems to Climate Change and Extreme Events

> ICTP-IAEA Workshop on Nuclear Reaction Data for Advanced Reactor Technologies
SELECTED 2010 ACTIVITIES

> ICTP-IAEA Course on Natural Circulation Phenomena and Passive Safety Systems in Advanced Water Cooled Reactors

> ICTP-IAEA School of Nuclear Knowledge Management

> ICTP-IAEA Workshop on Dense Magnetized Plasma and Plasma Diagnostics

> ICTP-IAEA School of Nuclear Energy Management new!
ICTP-IAEA School of Nuclear Energy Management (26 Nov. 2010)
Organizer(s): IAEA: H. Holger Rogner, Y. Yanev, M. Saidy. ICTP: C. Tuniz

Aimed at building future leadership in managing nuclear energy programs

- World Energy Balance, Geopolitics and Climate Issues
- IAEA Support for Nuclear Power Development
- Nuclear Power – Technology and Life Cycle, INPRO
- Nuclear Applications
- Nuclear Safety and Security
- Nuclear Law, International Conventions and Relevant Mechanisms
- Nuclear Safeguards
- Human Resource Development and Knowledge Management
- Nuclear Leadership/Management and Nuclear Sociology