

**Advanced Science Course  
Agenda  
28 November to 9 December 2011  
Austria Center Vienna, Hall G, Blue Level (U2)  
Vienna, Austria**

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**Opening Session**

**Monday 28 November**

- 13:30                    **Light lunch provided in Foyer G**
- 14:30                    **Welcoming Remarks by Executive Secretary Tibor Tóth**
- Video Address by HE Dr Michael Spindelegger, Vice  
Chancellor and Foreign Minister of the Republic of Austria**
- Remarks by HE Dr Werner Druml, Ambassador, Head of the  
Department of International Conferences and International  
Organizations in Vienna, Federal Ministry for European and  
International Affairs of the Republic of Austria**
- Remarks by HE Nils Daag, Ambassador, Permanent  
Representative of the Kingdom of Sweden to the CTBTO  
Preparatory Commission**
- Short Video**
- 15:20-16:00           **Lecture by Executive Secretary Tibor Tóth, followed by  
discussion**
- 16:00-17:00           **Course Overview**

## Tuesday 29 November

### Session I

- 10:00-11:00      **Overview of the CTBT and its Verification Technologies**  
(Jean DU PREEZ, Chief of External Relations and International Cooperation, CTBTO)
- 11:00-12:00      **Multilateral Verification Technologies**  
(Dr Ferenc DALNOKI-VERESS, Scientist-in-Residence, James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies)
- 12:00-13:15      Lunch
- 13:30              Depart for Institute of Atomic and Subatomic Physics,  
Vienna University of Technology  
[Bus loading begins at 13:15 in front of Austria Center Vienna]
- 14:00-15:00      **Basics of Nuclear Fission and Fusion**  
(Dr Mario VILLA, Reactor Operations Manager, Institute of Atomic and Subatomic Physics, Vienna University of Technology)
- 15:00-16:00      Tour of Institute of Atomic and Subatomic Physics
- 16:00-17:00      **Overview of Nuclear Weapons Technology & Testing and Development of Nuclear Weapons**  
(Dr Ferenc DALNOKI-VERESS, Scientist-in-Residence, James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies)
- 17:15              Depart for Austria Center Vienna

## Wednesday 30 November

### Session II

- 10:00-11:00      **IMS Technologies: Radionuclide and Noble Gas Monitoring**  
(Dr Joachim SCHULZE, Deputy Director, Fraunhofer-Institute for Technological Trend Analysis)
- 11:00-12:30      Visit to Rooftop Radionuclide Test Station  
(Dr Robert WERZI, Head of the Maintenance Unit, International Monitoring System Division, CTBTO)

12:30-14:00 Lunch

Session III

14:00-15:00 **IMS Technologies: Seismic Monitoring**  
(Dr Láslo G. EVERS, Assistant Professor, Climate and Seismology Department, Royal Netherlands Meteorological Institute)

15:00-16:00 **IMS Technologies: Hydroacoustic Monitoring**  
(Dr Láslo G. EVERS, Assistant Professor, Climate and Seismology Department, Royal Netherlands Meteorological Institute)

16:00-16:20 Break

16:20-17:20 **IMS Technologies: Infrasound Monitoring**  
(Dr Láslo G. EVERS, Assistant Professor, Climate and Seismology Department, Royal Netherlands Meteorological Institute)

**Thursday 1 December**

Session IV

10:00-11:00 **Waveform Data Processing and Analysis**  
(Spilio SPILIOPOULOS, Chief of the Monitoring and Data Analysis Section, International Data Centre Division, CTBTO)

11:00-12:00 **Radionuclide and Noble Gas Data Processing and Analysis**  
(Dr Ulrich STOEHLKER, Senior Radionuclide Officer, Scientific Methods Unit, International Data Centre Division, CTBTO)

12:00-12:20 Break

12:20-13:20 **Atmospheric Transport Modeling and Data Fusion**  
(Monika KRYSTA, Atmospheric Sciences Officer, International Data Centre Division, CTBTO)

13:20-15:00 Lunch

Session V

15:00-16:00      **IDC Data Analysis and Data Products**  
(Dr Peder JOHANSSON, Data and Quality Control Officer,  
International Data Centre Division, CTBTO)

16:00-17:00      **Global Communications Infrastructure**  
(Fernando ARAUJO, Chief of the Operations Section,  
International Data Centre Division, CTBTO)

**Friday 2 December**

10:00-13:00      Visit to IDC Operations Centre & Practical Observation of IDC  
Data Analysis Software and Techniques: Presentation of Data  
Analysis in the Multimedia Room

13:00-14:30      Lunch

Session VI

14:30-15:30      **Integrated Logistics Support for the IMS**  
(Natalie BRELY, Chief of the Monitoring Facilities Support  
Section, International Monitoring System Division, CTBTO)

15:30-16:30      **Maintenance of IMS Stations**  
(Dr Robert WERZI, Head of the Maintenance Unit, International  
Monitoring System Division, CTBTO)

16:30-16:45      Break

16:45-17:45      **Methods for Global Monitoring of Atmospheric Radio-Xenon  
to Verify Compliance with the CTBT**  
(Dr Martin KALINOWSKI, Carl Friedrich von Weizsäcker-  
Professor for Science and Peace Research, Carl Friedrich von  
Weizsäcker Centre for Science and Peace Research, University of  
Hamburg)

## Monday 5 December

- 10:00-10:40      **Introduction to the Noble Gas Monitoring Component of the IMS**  
(Bernd WERNSPERGER, Radionuclide Technician, Engineering and Development Section, International Data Centre Division, CTBTO)
- 10:40-12:00      Visit to Mobile Noble Gas Unit  
(Bernd WERNSPERGER, Radionuclide Technician, Engineering and Development Section, International Data Centre Division, CTBTO & Dr. Emerenciana BALLELOS DURAN, Radionuclide Officer, Engineering and Development Section, International Data Centre Division, CTBTO)

12:00-14:00      Lunch

### Session VII

- 14:00-15:00      **Verifying Compliance with the Treaty** (Dr Hein Haak, Director of Climate and Seismology, Royal Netherlands Meteorological Institute)
- 15:00-16:00      **OSI: Nuclear Explosion Signatures**  
(Gordon MACLEOD, Chief, Policy, Planning, and Operations Section, On-Site Inspection Division, CTBTO)
- 16:00-16:15      Break
- 16:15-17:15      **OSI: Technologies and Techniques**  
(Gordon MACLEOD, Chief, Policy, Planning, and Operations Section, On-Site Inspection Division, CTBTO)

## Tuesday 6 December

- 09:00              Depart for OSI Equipment Storage and Maintenance Facility  
[Bus loading begins at 08:45 in front of Austria Center Vienna]
- 10:00-12:00      Visit to OSI Equipment Storage and Maintenance Facility
- 12:15              Depart for Austria Center Vienna

13:00-14:30 Lunch

Session VIII

14:30-15:30 **OSI: Development of OSI Procedures & Operational Manual**  
(Dr DENG Hongmei Chief, Documentation Section, OSI Division CTBTO)

15:30-16:30 **OSI: Future Challenges**  
(Gordon MACLEOD, Chief, Policy, Planning, and Operations Section, On-Site Inspection Division, CTBTO)

16:30-16:45 Break

16:45-17:45 **OSI Integrated Field Exercises IFE08 & IFE14**  
(Matjaz PRAH, Coordinator of the On-Site Inspection Division, CTBTO)

17:45-18:30 Preparation for OSI Practical Exercise

**Wednesday 7 December**

09:00-13:00 OSI Practical Exercise

13:20-15:00 Lunch

Session IX

15:00-16:00 **Overview of Potential Civil and Scientific Applications of Monitoring Technologies**  
(John COYNE, Programme and Project Coordinator, International Data Centre Division, CTBTO)

16:00-17:00 **CTBTO Response to Great East Japan Earthquake and Tsunami and Fukushima Nuclear Power Plant Accident**  
(Dr Mika NIKKINEN, Head, Scientific Methods Unit, International Data Centre Division, CTBTO)

## Thursday 8 December

### Session X

- 10:00-11:00      **Technology Foresight & Technology Management**  
(Dr Philippe STEEGHS, Consultant, Engineering and Development Section, International Monitoring System Division, CTBTO)
- 11:00-12:00      **Advances in Sensors, Networks, Observational Technologies**  
(Dr Philippe STEEGHS, Consultant, Engineering and Development Section, International Monitoring System Division, CTBTO)
- 12:00-12:20      Break
- 12:20-13:20      **Advances in Network Performance Monitoring and Modeling**  
(Mark PRIOR, Seismic Acoustic Officer, Scientific Methods Unit, International Data Centre Division, CTBTO)
- 13:20-15:00      Lunch

### Session XI

- 15:00-16:00      **Outcome of Science and Technology 2011 Conference**  
(Dr Robert PEARCE, Consultant, International Data Centre Division, CTBTO & Dr Ronan LE BRAS, Head, Software Integration Unit, International Data Centre Division, CTBTO)
- 16:00-17:30      **Panel on the Nexus between Science & Diplomacy**  
(Dr Bharath GOPALASWAMY, Associate Director, Program In Arms Control, Disarmament And International Security, University Of Illinois At Urbana Champaign, Dr Rebecca JOHNSON, Executive Director, Acronym Institute, Dr. Patricia LEWIS, Deputy Director and Scientist in Residence, James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies & Andreas PERSBO, Executive Director, VERTIC)
- 17:30-18:00      Preparations for Research Proposal and Possible Consultations with PTS Staff

## Friday 9 December

10:00-12:00	Presentations of Project Proposals
12:00-13:30	Lunch
13:30-15:30	Presentations of Project Proposals
15:30-16:30	Closing Session