Infrasound Technology Workshop 2011

Dead Sea, Jordan

30 October - 4 November 2011

Sunday 30-10-2011

Workshop registration

19:00 Welcome Cocktail Reception

Monday 31-10-2011

09:00 - 09:40 Opening Ceremony

Session 1: IMS / IDC / NDC
Chairmen: J. Coyne, Representative from NRA

09:40 - 10:00 Status of the IMS infrasound network
Grenard, CTBTO, Vienna

10:00 - 10:20 2011 Eastern Mediterranean Campaign
Given, CTBTO, Vienna

10:20 - 10:40 Highlights from ITW2010 and future directions
Haralabus, CTBTO, Vienna

10:40 - 11:00 Coffee break

11:00 - 11:20 Infrasound developments at the IDC
Mialle, Brown, Given, Bittner, CTBTO/PTS, Austria

11:20 - 11:40 The IDC Seismic, hydroacoustic and infrasound global low and high noise models
Brown, Ceranna, BGR, Germany
Prior, Mialle, Le Bras, CTBTO/PTS, Austria
Performance assessment of the IS07 infrasound station
Marty, CTBTO/PTS, Austria,
Denis, CEA, DAM, DIF, Arpajon, France

Lunch break

Infrasound arrivals in the IDC bulletins: Reviewing 18 months of results
Green, AWE Blacknest, UK

Infrasound in Indonesia
Hidayat and Subakti, LDG, Indonesia

Buddha landslide in eastern Uganda recorded at IS32
Tumwikirize, Ministry of Energy and Mineral Development, Uganda

Strengthening the capacity for infrasound monitoring in Africa through CTBTO
Okoe, Nelson, NDC Ghana

Iraqi NDC
Thair, Sadoon, Iraq

Coffee break & Poster Session

Tuesday 01-11-2011

Session 2: Modeling and Infrasound Network Performance
Chairmen: R. Waxler, J. Given

Stratospheric returns from explosions and the size of the shadow zone
Evers, Van Geyt, Smets, Fricke, KNMI, Delft University of Technology, Netherlands

Incorporating numerical modelling into estimates of the detection capability of the IMS infrasound network
Le Pichon, Vergoz, CEA/DAM/DIF, France
Ceranna, BGR, Germany

Modeling of the effects of nonlinear propagation and reflection of infrasonic by layered wind velocity and temperature nonhomogeneities in the atmosphere
Chunchuzov, Kulichkov, Obukhov Institute of Atmospheric Physics, Russia
Firstov, FEB RAS, RAS, Russia
09:30 - 09:50 On the influence of tropospheric jets on stratospheric arrivals
Waxler, Assink, Talmadge, Blom, Velea, NCPA, USA

09:50 - 10:20 Coffee break & Poster Session

10:20 - 10:40 Mapping the infrasound wavefield using dense seismic network data; comparison of recorded data with synthetics from ground-to-space and internal gravity-wave perturbed ground-to-space models
Hedlin, Groot-Hedlin, University of California, USA
Drob, Naval Research Laboratory, USA

10:40 - 11:00 A wide-angle modal expansion for infrasound propagation in the atmosphere
Assink, Waxler, Blom, NCPA, USA

Session 3: Infrasound data processing
Chairmen: D. Brown, A. Le Pichon

11:00 - 11:20 Infrasound and seismic data fusion for improvement of the quarry blast epicenter localization accuracy
Smirnov, Dubrovin, National Nuclear Center, Kazakhstan

11:20 - 11:40 Analysis of classification possibility infrasound signals from different sources based on correlation ability
Tsymbulskaya, Kulichkov, Chulichkov, RAS, Russian Federation

11:40 - 12:00 Into the Deep End of Sound
Garcès, Infrasound Laboratory, HIHP, SOEST, University of Hawaii at Manoa

12:00 - 14:00 Lunch break

14:00 - 14:20 Infrasound categorization: towards a statistics-based approach
Vergoz, Gaillard, Le Pichon, Brachet, CEA/DAM, DIF, France
Ceranna, BGR, Germany

14:20 - 14:40 The first results of infrasound interferometry in Netherlands
Fricke, Evers, KNMI, Netherlands
Simons, Ruigrok, Wapenaar TU Delft, Netherlands
14:40 - 15:00  
**Machine learning for infrasonic classification of hazardous volcanic eruptions**  
Garcès, Bellesiles, Williams, HIGP, USA  
Ham, Iyengar, Florida Institute of Technology, USA  
Fee, Geophysical Institute Alaska, USA  
Matoza, University of California, USA  
Le Pichon, Blanc, CEA/DASE, France  
Murayama, NDC, Japan  
Mialle, Brown, CTBTO/PTS, Austria  
Servranckx, Montréal volcanic Ash Advisory Centre, Canada

15:00 - 15:20  
**Coherent ambient infrasound recorded by the global IMS network**  
Landes, Le Pichon, Brachet, CEA/DAM/DIF, France  
Matoza, University of California, USA  
Ceranna, BGR, Germany

15:20 - 15:50  
**Coffee break**

15:50 - 16:10  
**Maximum likelihood approach to detect and estimate infrasound wave parameters**  
Charbit, Abed-Meraim, Blanchet, CNRS/LTCI, France  
Le Pichon, Cansi, CEA/DAM/DIF, France

16:10 - 16:30  
**A regional infrasound network in the American west**  
Assink, Waxler, Talmadge, Blom, Droh, USA

16:30 - 16:50  
**The study on propagation along the surface of infrasound based on wide-distributed sensor network**  
Yang, Teng, Lu, Chinese Academy of Sciences, China

**Wednesday 02-11-2011**

**Session 4: Instrumentation**  
**Chairmen: P. Grenard, L. Evers**

08:00 - 08:20  
**Differential micro barometer ISGM03M**  
Alerborn, Fedin, Glushkov, Selyatitskiy, Shcherbakov, Torkiyy

08:20 - 08:40  
**High-resolution, low power, portable infrasound station**  
Zimakov, Refraction Technology Inc., USA  
Erl, TRINAS, Austria  
Alerborn, Glushakov, Selyatinskii, Tonkikh, Fedin, SDC, Russian Federation
08:40 - 09:00 Development of the portable observation kit by using the Nano-resolution digital quartz resonator sensor
Arai, Murayama, Iwakuni, Nogami, NDC, Japan
Imanishi, Watada, Earthquake Research Institute, Japan
Oi, Toho mercantile co., Japan

09:00 - 09:20 Development of the IMS Infrasound network auxiliary low cost infrasound network
Kachalin, NDC, Ukraine

09:20 - 09:40 Methods for Unravelling Infrasound Sensor and Wind Filter Performance
Hart, Jones, Sandia National Laboratory

09:40 - 10:10 Coffee Break

10:10 - 10:40 Wind noise reduction techniques in low frequency measurements
Webster, Raspet, NCPA, USA

10:40 - 11:00 The self-similarity of “wind noise” qualified with optical fiber infrasound sensors
Walker, De Wolf, Zumberge, University of California, USA
Denis, CEA, France

11:00 - 11:20 The affect of spatial filters on infrasound array responses
Brown, Mialle, CTBTO/PTS, Austria
McCormack, Geological Survey of Canada

11:20 - 11:40 In-situ calibration and signal quality assessment for infrasound array elements
Gabrielson, Poese, Penn State University, USA
Haralabus, CTBTO/PTS, Austria
Szuberla, Withoff, University of Alaska, USA

11:40 - 12:00 IWORM: Hybrid acquisition software system for infrasound data
Dricker, Friberg, Hellman, ISTI, USA
Garcès, University of Hawaii, USA

12:00 - 18:00 Jordanian Culture afternoon
Thursday 03-11-2011

Session 5: Infrasound sources and Civilian Applications of Infrasound
Chairmen: D. Green, G. Haralabus

08:30 - 08:50
High frequency infrasonic radiation from the 11 March 2011 Tohoku Mw 9.1 earthquake
Walker, Groot-Hedlin, University of California, USA
Le Pichon, CEA, France
Che, Institute of Geoscience and Mineral Resources, Korea
Garcès, University of Hawaii, USA

08:50 - 09:10
Long period atmospheric waves excited by the 2011 great Tohoku-Oki earthquake
Arai, Iwakuni, Murayama, Nogami, NDC, Japan
Watada, Earthquake Research Institute, Japan

09:10 - 09:30
Infrasound and SO: Observations of the 2011 explosive eruption of Nabro volcano, Eritrea
Fee, Geophysical Institute, USA
Carn, Department of Geological and Mining Engineering and Sciences, Prata, Norwegian Institute for Air Research, Norway

09:30 - 09:50
Infrasonic study of cyclones surrounding Madagascar detected by I33MG
Andrianavoniasa, Rakotoarisoa, Randrianarinosy, Rambolamanana, Ramanantsoa, Institut et Observatoire de Géophysique d’Antananarivo, Madagascar

09:50 - 10:20
Coffee break

10:20 - 10:40
Refraction of the hurricane generated microbarom signal by the hurricane itself
Waxler, Blom, Frasier, Talmadge, Hetzer, NCPA, USA

10:40 - 11:00
An international coordinated archive for infrasound data: a joint initiative of ISC, IRIS and ORFEUS
Storchak, Sleeman, Traband, Ahern, ISC, Berkshire, UK
Evers, KNMI, Delft University of Technology, Netherlands

11:00 - 11:20
Infrasound Signals Generated by the Tohoku Earthquake Mw9.0
Kim, KiGAM, South Korea
11:20 - 11:40  Study on localization of infrasound sources emitted by natural events
  Yang, Teng, Lu, Chinese Academy of Sciences, China

11:40 - 14:00  Lunch break

14:00 - 14:00  A global study of volcanic infrasound characteristics and the potential for long-range monitoring
  Dabrowa, Rust, Phillips, University of Bristol, UK
  Green, AWE, UK

14:20 - 14:40  IS48: station performance during 2011
  Khemiri, Agrebi, Kallel, CNCT, Tunisia

15:00 - 17:00  Closing Ceremony

19:00  Official Dinner

Friday 04-11-2011

09:00 - 12:00  Expert Group Meeting
  Chairmen: A. Le Pichon, L. Evers

12:00 - 14:00  Lunch break

14:00 - 16:00  Expert Group Meeting
  Chairmen: A. Le Pichon, L. Evers