



The Abdus Salam
International Centre for Theoretical Physics



ICTP Advanced Workshop on Geophysics, Geodesy and Tectonics of the North Africa Plate Boundary for Better Earthquake and Tsunami Hazard Assessments

15 - 21 May 2010

Algiers – Algeria

In Co-operation with the Algerian Ministry of Scientific Research



Co-sponsors: IASPEI – IAG - ENSF

Saturday 15th of May

08:30 – 10:00 Registration and administrative formalities

10:00 – 10:30 Welcoming remarks from the Organizers

Pre-workshop School: 15th – 17th of May 2010

Physics of earthquakes and tsunami by Fabio Romanelli (University of Trieste)

GPS fundamentals and data analysis by Riccardo Barzaghi (Polytechnic of Milan)

InSAR fundamentals and applications by Ian Hamling (ICTP, Trieste)

Earthquake geology and paleoseismology by Mustapha Meghraoui (IPGS, Strasbourg)

Integrated Continental deformation studies by Abdelkrim Aoudia (ICTP, Trieste)

Regional and site specific earthquake hazard by Fabio Romanelli (University of Trieste)

International Conference: 18th – 21st of May 2010

Tuesday 18th

8:30 – 10:00 Registration and administrative formalities

10:00 – 10:30 Opening ceremony + welcoming remarks from the Organizers

10:30 – 11:00 The ICTP training programs and the African initiative
Abdelkrim Aoudia (ICTP Trieste)

11:00 – 11:30 Coffee break

11:30 - 12:00 Reflections on Earthquake Hazards and the Future of Scientific Research in the Arab Region: is there a Hope?
Muawia Barazangi (Cornell University)

12:00 – 12:30 The new millennium of earthquake resistance: a terrible beginning but can we do better?
Roger Bilham (Colorado University)

12:30 – 14:00 Lunch

14:00 – 14:30 The TERMEX project and the Mediterranean cooperation in Geosciences
Francois Roure (IFP) and the Termex group

14:30 – 15:00 Preparing for the next destructive earthquake in North Africa: Obstacles and Challenges
Mustapha Meghraoui (IPG Strasbourg) and Abdelkrim Aoudia (ICTP Trieste)

Session: Recent and Historical Seismicity

15:00 – 15:20: Revisiting earthquake hazard in northern Morocco using space-based geodetic data: A case study of the Al Hoceima Earthquakes
Driss Bensari (Muhammedia Engineering School, Rabat)

15:20 – 15:40 The Seismicity of the Rif region, Northern Morocco, Historical and Instrumental data
Nacer Jabour (CNRST, Rabat) and Taoufik Mrabet (Université de Tanger)

15:40 – 16:00 Intermediate depth and deep earthquakes: complexity of the Ibero-Magrebian region,
Buforn E. (Univ. Complutense, Madrid), Cesca S., M. Bezzeghoud, del Fresno C. and Udías, A.

16:00 – 16:20 Seismic source parameters of early XX century earthquakes in Southern Spain. Contribution to the regional seismic stress analysis
J. Batlló (University of Lisbon), D. Stich, R. Macià and J. Morales

16:20 – 16:50 Coffee Break

16:50 - 17:10 Compiling an earthquake catalogue for Algeria: Sources, method and first results
Assia Harbi (CRAAG, Alger)

17:10 – 17:30 : Velocity field along the Tell Atlas (northern Algeria) using seismic moment summation of earthquakes
F. Ousadou (CRAAG, Alger), R. Harouni and A. Ayadi

17:30 – 17:50 Spatial distribution of aftershocks of the Al Hoceima 2004 earthquake; Implications for the identification of new active faults,
Abdelouahed Birouk (CNRST, Rabat), Sanaa El Mouraouah, Mohamed Kasmi, Aomar Iben Brahim, Azelarab El Mouraouah, El Arbi Toto, Ahmed Ben Souda, Abdelouahed Talhaoui

17:50 – 18:10 Seismic Empirical Relations for the Tellian Atlas, North Africa, and their Usefulness for Seismic Risk Assessment,
Noureddine Beghoul (USTHB, Alger), J-L Chatelain, M-S Boughacha, H. Benhallou, R. Dadou, A.Mezioud-Saïch

19:00 – 22:00 Reception & Social event

Wednesday 19th

Session: Recent and Historical Seismicity

9:00 – 9:40 The 2009 Aquila earthquake, seismicity and active tectonics
Claudio Chiaraba (INGV, Rome) and Daniela Pantosti

09:40 – 10:00 The Izmit Earthquake (1999) and Marmara Faults near Istanbul: what we know after 10 years of research
Mustafa Aktar (Kandilli Observatory, Istanbul)

10:00 – 10:30 Coffee break

Session: Active Deformation studies and monitoring

- 10:30 – 10:50** Rate of coastal uplift and long-term activity of the Sahel fold near Algiers
Maouche S (CRAAG Alger), Belabbes S, Meghraoui M, Morhange C, Bouhadad Y
- 10:50 – 11:10** Postseismic Deformation of the Mw=6.9, 21 May 2003 Zemmouri (Algeria) Earthquake deduced from PSInSAR,
Cakir Z (ITU), M. Meghraoui, S. Belabbes, A. Akoglu and B. Chema
- 11:10 – 11:30** Stress transfer among en echelon and opposing thrusts and tear faults: Triggering caused by the 2003 $M_w=6.9$ Zemmouri, Algeria, earthquake,
Lin Jian (WHOI, Boston), Ross S. Stein, Mustapha Meghraoui, Shinji Toda, Abdelhakim Ayadi, Catherine Dorbath, Samir Belabbes
- 11:30 – 11:50** The Western Mediterranean network (WM): an international coordinated effort in the Ibero-Maghrebian region
Pazos, A. (Real Observatorio de la Armada, San Fernando), J. Martín Davila, E. Buforn, J. Gárate, M. Catalán, Winfried Hanka; A. Udías, M. Bezzeghoud, M. Harnafi, and ROA seismic
- 11:50 – 12:10** The Gulf of Cádiz: thrusting or strike-slip motion?
Bezzeghoud M. (University of Evora), Buforn E., Caldeira B., Pro M.C., Borges J.F., Udías A.
- 12:10 – 13:30** Lunch
- 13:30 – 13:50** The Adaptation of SeisComp3 onto KOERI Real Time Earthquake Processing System
Mustafa Comoglu (Kandilli Observatory, Istanbul), Nurcan Meral ÖZEL, Mehmet Yilmazer, Ocal Necmioglu, Dogan Kalafat, Mustafa Erdik
- 13:50 – 14:10** Active Faults in Northeast Mediterranean Sea Region Retrieved From Waveform Modeling
Ali Pinar (Istanbul University, Avcilar), Nurcan Meral Özel, Mustafa Erdik
- 14:10 – 14:30** Tomography and geodynamics structure of the Ibero-Maghrebian region
Youssef Timoulali (CNRST, Rabat), Mourad Bezzeghoud, Bento Caldeira, José Fernando Borges, Youssef Hahou
- 14:30 – 14:50** Seismic monitoring and warning in Morocco: Recent Developments
A. El Mouraouah (CNRPST, Rabat), A. Iben Brahim, A. Birouk, M. Kasmi and H. S. EL Mouraouah
- 14:50 – 15:10** Moho Depth And Crustal Velocity Structure Beneath The RTC (Morocco) And TAM (Algeria) Stations, From Teleseismic Receiver Functions Analysis
Parfait N. (CNRST, rabat), Eloumala Onana, Aomar Iben Brahim, John R Evans, Azelarab El Mouraouah, Abdelkader Chabane
- 15:10 – 15:30** Active tectonics of Lybia as evidenced from fault plane solutions
Abdunnur Ben Suleman (University of Tripoli) & El Hadi Gashout

15:30 – 15:50 Seismotectonic Zones at Sinai and Its Surrounding
Abdel Rahaman, M. (Ain Shams University, Egypt), Tealeb, A., Mohamed, A., Deif, A., Abou Elenean, K. and M.S. El Hadidy

15:50 – 16:20 Coffee break

16:20 – 19:00 *Visit to the Roman city of Tipaza*

Thursday 20th

Session: Earthquake hazard

09:00 – 09:30 Why global GEMnastics cannot cure earthquake amnesia: mathematical failures in the treatment of a fatal disease
Roger Bilham (University of Colorado)

09:30 – 09:50 New Investigation of the 1716 Algiers (Algeria) earthquake from Historical sources: Ottoman, Arabic and French files
Abdessemed-Foufa A.A. (Université de Blida) & D. Benouar

09:50 – 10:10 Study of site effects in the Bay of Algiers
A. Bouchelouh (CGS, Alger), B. Guillier and N. Zaourar

10:10 – 10 :30 Probabilistic seismic hazard maps for Sinai Peninsula, Egypt
Deif, A (NRAIG, Cairo), K Abou Elenean, M El Hadidy, A Tealeb and A Mohamed

10:30 – 11:00 Coffee Break

11:00 – 11:20 Processing, modelling and inversion of seismic ambient noise: Application in Tunis, Tunisia,
Louati, S. (Ecole Nationale d'Ingénieurs de Tunis), N. Bouden-Romdhane, F. Rejiba, C. Camerlynck

11:20 – 11:40 Earthquake damage mapping and reconstruction monitoring based on high resolution space imagery, cases of Boumerdes (2003) and Haiti (2010)
Belabbes S. (SERTIT, Strasbourg), Yésou H., Montabord M., Clandillon S., Battiston S., Allenbach B., Uribe, C. and P. de Fraipont

11:40 – 12:40 Panel Discussion on Earthquake Hazard: the way forward?

12:40 – 14:00 Lunch

14:00 – 14:20 Witnesses of recent and active deformation off the Algerian coast and some hazard implications, Jacques Déverchère (Université de Brest), Nathalie Babonneau, Karim Yelles, Bernard Mercier de Lépinay, Antonio Cattaneo, & the Scientific teams of MARADJA (2003) & MARADJA2 (2005) cruises

Session: Tsunami hazard

14:40 – 15:00 Large Historical Earthquakes and Tsunami Hazards in the Western Mediterranean: Source Characteristics and Modeling
Mustapha Meghraoui (IPG Strasbourg), Assia Harbi , Samir Belabbes and Said Maouche

15 :00 – 15:20 Tsunami hazard in the western Mediterranean Sea: recent advances constrained from numerical modeling
H. Hébert (CEA-LDG, Bruyères le Châtel), J. Roger, S. Allgeyer, A. Loevenbruck, A. Gailler, and F. Schindelé

15:20 – 15:40 Geological evidence of tsunami of the past in Eastern Sicily
Daniela Pantosti (INGV, Rome)

15:40 – 16:10 Coffee Break

16:10 – 16:30 New evidence for impacts of the AD365 tsunami along the North African Coast
Stiros S. (University of Patras) and De Jevenois Acillona P.

16:30 – 16:50 Modeling and analysis of Eastern Mediterranean tsunamis affecting North-East Africa
Yalciner Ahmet C (METU, Ankara), Andrey Zaytsev, Anton Chernov, Efim Pelinovsky, Ceren Ozer, Hulya Karakus

16:50 – 17:10 Tsunami and Turkey
Öcal Necmioğlu (Kandilli Observatoty, Istanbul), Nurcan Meral Özel, Mustafa Erdik

17:10 – 18:30 Panel Discussion on Tsunami Hazards and Early Warning System in the Mediterranean

Friday 21st

Commemoration of the 21st May, 2003 earthquake

Preliminary

09:00 – 09:20 Strong-Motion Network in Algeria and Their Efficient Use in the Derivation of Regional Ground-Motion Predictive Models
N. Laouami (CGS, Alger)

09:20 – 09:40 Site effects assessment using passive and active sources. An attempt of correlation with seismic damage distribution following the 2003 Boumerdes earthquake
F. Semmane, CRAAG, Alger.

09:40 – 10:00 Improving earthquake locations: The case study of Zemmouri-Boumerdes earthquake (21/05/2003, Mw 6.8)
Dorbath, C. (EOST-IPG Strasbourg), Ayadi, H., Bounif, A., and Aidi, C.

10:00 – 10:20 Coffee Break

10:20 – 10:40 Earthquakes and the civil protection in Algeria
M. Khellaf and K. Bradai (Direction Generale de la Protection Civile, Algerie)

10:20 – 10:40 Active tectonics, seismotectonics and SAR interferometry of the Zemmouri-Boumerdes 2003 earthquake : Results and implications
Meghraoui, M. (IPG Strasbourg), Belabbes, S., and Cakir Z., Ayadi, A, and Maouche, S.

10:40 – 12:00 Open Discussion Session and closure:

Open Discussion on the short and long term Needs of North African geoscientists in research, post-graduate education and infrastructure as well as data management/sharing. In this session we will discuss the role the international scientific community has been playing in geoscience in North Africa and will come up with suggestions for new actions and possible course corrections that may be necessary for greater impact.

the posters will be displayed during the whole workshop