33rd International Geological Congress, Oslo, August 6th – 14th, 2008

INQUA TERPRO – Commission on Terrestrial Processes Deposits, and History

Focus Area on Paleoseismicity and Active Tectonics

MINUTES OF THE 1st BUSINESS MEETING

Oslo, 9th August 2008

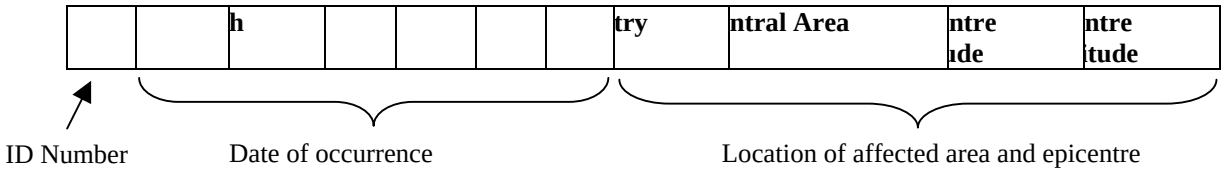
Room Hordaland, 17:30 – 19:00

Agenda:
1) PRESENTATION OF THE 2008-2011 ACTIVITIES OF THE FOCUS AREA
2) FUTURE MEETINGS

List of Participants: (28 people from 17 countries)
K. ATAKAN, F.A AUDEMARD, T. AZUMA, C. BECK., E. BRUNETTO, V. COMERCI, T. FERNANDEZ-STEEGER, J.L. GINER-ROBLES, A. GODOY, C.GRUETZNER, L. GUERRIERI, M. IRIONDO, H. KORAL, M. LOPEZ, D. KROHLING, S. MARCO, J. MC CALPIN, A.M. MICHETTI, N.A. MORNER, K. OKUMURA, S. PAVLIDES, R. PEREZ, S. PORFIDO, K. REICHERTER, T. ROCKWELL, M.A. RODRIGUEZ-PASCUA, M. SINTUBIN, I. STEWART.

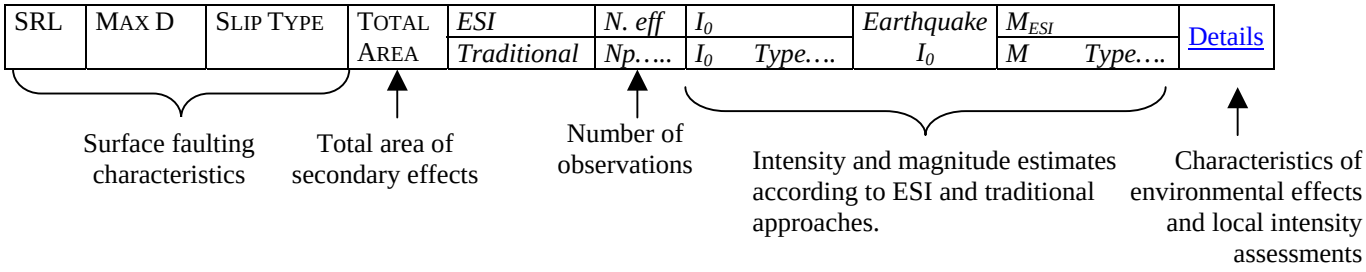
1. FOCUS AREA ACTIVITIES IN THE PERIOD 2008-2011: A GLOBAL CATALOGUE OF EARTHQUAKE ENVIRONMENTAL EFFECTS.

MICHETTI presents the activities of the Focus Area in the 2008-2011 intercongress period. The Project proposed by the Focus Area, "An innovative approach for assessing earthquake intensities: the INQUA Scale, based on seismically-induced ground effects in the environment", has been formally approved and funded for 2008-09 by the INQUA Executive Committee.
The primary goal will be the compilation of a Global Catalogue of Earthquake Environmental Effects. To this end, a strong support by Regional Working Groups is desirable, in providing data input.
A first proposal of standard structure was illustrated by PORFIDO during the STP03 scientific session. In the string below is reported a possible scheme:



The second part of the string should be more specifically focused on the characteristics of environmental effects. Surface faulting parameters (surface rupture length, maximum displacement, prevalent slip type) and the total area of secondary effects are necessary data for the assessment of I_0 through the ESI scale. A corresponding magnitude value (M_{ESI}) should be

provided on the basis of empirical relationships between ESI intensity and magnitude "ad hoc" developed, similarly to those which relate magnitude and damage based-intensity evaluations.



The last field links the string to a report which summarizes the characteristics of environmental effects more in detail. This report should comprehend at least i) a descriptive introduction of the event; ii) a list of environmental effects classified by locality and corresponding local ESI intensity assessments; iii) a list of references. Additional issues could be ESI local intensity maps as well as photographs and sketches. Possible examples in this direction are illustrated in Silva et al. (2007) and Serva et al. (2007).
A list of open issues was also identified and discussed:

- Which size of earthquakes are we going to collect? Minimum threshold?
- Are we going to collect earthquakes also outside of areas covered by Regional Working Groups? What are the implications?
- One worldwide catalogue or national catalogues?
- Do we need to differentiate among 1) recent and future earthquakes, based on field surveys of environmental effects ; 2) revision of past earthquakes based on historical sources; 3) paleoearthquakes, based on paleoseismological features.
- Location of an ESI epicentre: is it useful?
- How to develop relationships between magnitude and ESI intensity degrees;
- Strategies for data collection.

2) FUTURE MEETINGS

- **16th - 23rd February 2009: Field Trip Workshop "The Dead Sea Rift as natural laboratory for earthquake behaviour: prehistorical, historical and recent seismicity" Leaders: Rifka Amit, Alessandro M. Michetti**

The Field Trip Workshop organized by the Geological Survey of Israel and INQUA Focus Group on Paleoseismology and Active Tectonics, in collaboration with UNESCO (IGCP project 567), is aimed at improving our understanding of Paleoseismology and Seismic Hazard Assessment, at a global level and specifically in the Eastern Mediterranean region, with an emphasis on the study of the environmental effects of earthquakes and on the application of the ESI 2007 intensity scale.
Limited funding from INQUA will be used for supporting the participation of young scientists (MSc, PhD) to the workshop.

- **September 2009: Workshop on Earthquake Archeology and Paleoseismology in Baelo Claudia Roman ruins, Southern Spain. Leaders: Pablo Silva, Klaus Reicherter**

The Workshop is organized by the Spanish Regional Working Group in collaboration with the IGCP project 567. Duration: one week.

ANNEX

33rd IGC Session STP-02 (co-sponsored by INQUA)

Deducing nature and magnitude of paleoearthquakes: Finding paleoevents and quantifying them

Oral Communications

- Paleoseismological investigations for Nuclear Power Plant siting: Lessons learned from the Kashiwazaki-Kariwa accident
Godoy Antonio, Michetti Alessandro Maria

- Paleoseismicity in Sweden: Characteristics, means of magnitude estimates and implications for hazard assessments
Mörner, Nils-Axel

- Paleoseismologic investigations of the El Alto fault system on the Altiplano plateau in the outsides of La Paz, Bolivia
Minaya Estela, Ramirez Victor I.. Hermanns Reginald L., Clague John, Gonzalez, Magaly, Valencia Javier, Cerritos Oscar

- Surface faulting hazard in Italy: Input for land management
Guerrieri Luca, Blumetti Anna Maria; Di Manna Pio; Serva Leonello; Vittori Eutizio

- Archeoseismological, paleoseismological and geopyhsical investigations in the Roman Ruins of Baelo Claudia (southern Spain)
Klaus Reicherter, Silva Barroso Pablo, Gruetzner Christoph

- Active tectonics of the16 July 2007 earthquake near Kashiwazaki, central Japan: A key for seismic risk assessment of nuclear powerplants
Okumura Koji

- Paleoearthquakes at Monte Netto, Brescia, Italy: Assessing the seismic potential of the Po Plain from the analysis of coseismic environmental effects.
Michetti Alessandro Maria, Berlusconi Andrea, Livio Franz, Sileo Giancanio, Zerboni Andrea, Cremaschi Mauro, Trombino Luca, Mueller Karl, Vittori Eutizio, Carcano Cipriano, Rogledi Sergio

- Can a logic-tree approach make sense of archaeological evidence for Palaeoseismic events? Testing the logic tree approach at Sagalassos (SW Turkey)
Sintubin, Manuel, Stewart Iain

- The geological effects of the 1908 Southern Calabria - Messina earthquake (Southern Italy)
Comerci Valerio, Blumetti Anna Maria, Brustia Elisa, Di Manna Pio, Fiorenza Domenico, Guerrieri Luca, Lucarini Mauro, Serva Leonello, Vittori Eutizio

- Aquisgrani terrae motus factus est: Evidence for historical earthquake damage in the Aachen Cathedral (Germany)

Reicherter Klaus, Schaub Andreas, Gruetzner, Christoph, Fernandez-Steeger, Tomas

- Cyclicity in the sedimentary record of a small pull-apart basin as paleoseismic evidence of surface faulting during the holocene along the Ibagu fault, Colombia
Diederix Hans, Osorio Jairo Alonso, Montes Nohora

- Paleoseismic evidence for reverse fault activity in relationship with a phreatomagmatic eruption in 1970 at Deception Island (West-Antarctica)
Pérez-López, Raúl, Rodríguez-Pascua Miguel Ángel, Bejar, Marta Martínez-Díaz José Jesús, Giner-Robles Jorge Luis1; Silva, Pablo Gabriel Villamor, Pilar González-Casado, José Manuel

- Towards a catalogue of earthquake environmental effects.
Michetti Alessandro Maria, Comerci Valerio, Esposito Eliana, Guerrieri Luca, Porfido Sabina, Silva PabloG., Vittori Eutizio

- Paleoseismological analysis at a railway trench across an intraplate extensional structure: the Concud fault
Lafuente Paloma, Arlegui Luis E, Liesa Carlos L, Simón José Luis

- Characterization of earthquake-induced clastic dikes by their magnetic fabric
Marco Shmuel, Eyal Yehuda, Weinberger Ram, Levi Tsafrir, Aifa Tahar

Poster Session

- Deducing the source and magnitude of paleoearthquakes from paleoliquefaction features: Example of the Boumerdes (Algeria) region
Bouhadad Youcef

- Paleoseismologic indicators in the Ganjeolgot area, SE KoreA
Jin Kwangmin, Kim Young-Seog

- New scale of macroseismic intensity-ESI 2007 applied to peruvian earthquakes
Zamudio Yolanda

- Morphotectonic modeling of the Ibagu strike-slip fault, Colombia.
Franco Luis E., Osorio, Jairo, Velandia, Francisco, Montes, Nohora, Diederix, Hans

- First paleoseismic studies on the El Salvador Fault Zone
Canora-Catalan Carolina, Martinez-Diaz José J., Villamor Pilar, Berryman Kelvin, Alvarez-Gomez Jose, Capote Ramon, Bejar MartA, Tsige Meaza

- Redetrodefomation of a Quaternary fault; Suryum fault at the southeastern coast of Korean peninsula
CHOI SUNG-JA, HONG DUKGEUN, CHWAE UEECHAN, Shim Taekmo, SONG, YUNGOO

- Sedimentary, paleoseismic and archaeological record of earthquakes in moderate seismic zones. An example in the SE of Spain
Rodríguez-Pascua, Miguel Angel, Pérez-López Raúl, Giner-Robles Jorge Luis, Bischoff James, Garduño-Monroy Victor Hugo, Israde-Alcántara Isabel, Silva Pablo Gabriel, Calvo-Sorando José Pedro

- A standardised procedure for earthquake archaeology: The archaeoseismological logic tree
Stewart Iain, Sintubin Manuel

- Geophysical investigation of earthquake induced paleoseismological features

Al-Shukri Haydar, Mahdi Hanan; Alkadi Okba; Tuttle Martitia