



## Commission 1.1 Soil Morphology & Micromorphology *Newsletter*

December 2007, vol. 2, p.1-16

### Letter from the Chair

Dear Members,

This is our second bi-annual Newsletter, and Soil Morphology and Micromorphology is healthy, strong, and growing! Our most exciting news is that the 13<sup>th</sup> International Conference on Soil Micromorphology in Chengdu China, Sept. 11-16<sup>th</sup> is well underway. Details are listed below (including reports from the pre-meeting planning trip), please encourage submissions and attendance as this promises to be a spectacular meeting!

All IUSS Commissions were asked to provide 3 proposed symposia for the 19<sup>th</sup> World Congress to be held in Brisbane, Australia 2010. With input from you, the Commission 1.1 officers (myself, Rosa Poch, and Geoff Humphreys) developed and submitted 3 topics for consideration. The final decisions will be made in July 2008 with consideration for linkages among all Divisions and Commissions.

We have very sad news at the sudden and unexpected passing of our friend and colleague, Geoff Humphreys. In his honor, we have set up a web page with letters and photos from his friends and colleagues: <http://www.agry.purdue.edu/pedology/iuss/Geoff.html>.

Dr. Fabio Terribile announced an exciting course on Soil Micromorphology and Mineralogy to be held this February 11-16, 2008, in Portici-Napoli, Italy.

I'd also like to remind you of our New Young Micromorphologist's Publication Award - Applications are due to me by April 30, 2008. Please encourage anyone who fits the criteria to apply! For more information on this award and other Commission 1.1 activities, please visit our web site: <http://www.agry.purdue.edu/pedology/iuss/>

Details on all of these and more are below. Please send any new information to me, Brenda J. Buck ([buckb@unlv.nevada.edu](mailto:buckb@unlv.nevada.edu)) or Vice Chair, Rosa Poch ([rosa.poch@macs.udl.es](mailto:rosa.poch@macs.udl.es)).

Sincerely  
Brenda J. Buck  
Chair, Commission 1.1  
Dept. Geoscience, University of Nevada Las Vegas  
4505 Maryland Parkway  
Las Vegas NV 89154  
<http://www.agry.purdue.edu/pedology/iuss/>

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## INVITATION FOR PARTICIPANTS

On behalf of the International Organizing Committee, I invite you to attend the:

**13th International Conference on Soil Micromorphology (ICSM)**  
**“Soil Micromorphology: Micro-investigation on the Earth's Critical Zone”.**  
Chengdu, Sichuan, China,  
September 11-16, 2008.

This meeting presents a thrilling opportunity to participate in exciting scientific dialogue while also enjoying some of the most amazing culture, history, and natural wonders China has to offer!

We have a wide array of excellent sessions including topics on agro-environmental sustainability, interactions between organisms and minerals, global scale processes, extreme environments, urban soils, paleopedology, archaeology, genesis and classification, new micro- technologies and image analysis, micromorphology in other sciences, and in paddy, and mountain soils.

Several pre- and post- tours have been scheduled, which will take you to a mix of fabulous cultural sites and scientifically interesting soils of China: the Great Wall, Tibet, Three Gorges, the National Panda Park, Terra Cotta Warriors, paddy soils, extreme mountain soils, travertine deposits, and the Loess Plateau. These tours will provide a unique opportunity to view Chinese soils, agricultural systems, history, culture, and recent social-economic developments.

Chengdu is the capital of "Heavenly State", Sichuan Province, located in the west of Sichuan Basin and in the center of Chengdu Plain. Chengdu features profound natural beauty in the surrounding areas of Jiuzhaigou Scenic Area and Huang Long Valley. It hosts historical and cultural places of interest such as the Thatched Cottage of Du Fu, Wuhou Memorial Temple and Wenshu Monastery, and offers some of the most delicious food of Sichuan cuisine and tea culture with traditional opera performances.

We promise you a scientifically and culturally stimulating 13th ICSM.

See you there!

Brenda J. Buck, Ph.D.  
Chair: International Union of Soil Science, Commission 1.1



## Sessions and Corresponding Convenors

### 1. Interpreting soil quality and agro-environment sustainability

Conveners: Q. Cai, S. Nortcliff, L. Bissonais, X. He  
Corresponding: Q. Cai, [caiqg@igsnr.ac.cn](mailto:caiqg@igsnr.ac.cn)

### 2. Interactions between organisms, fabrics & minerals

Conveners: B. Buck, I. Young, Y. Zhang, P. Owens  
Corresponding: P. Owens, [prowens@purdue.edu](mailto:prowens@purdue.edu)

### 3. Micromorphic investigations on global scale processes

Conveners: C. Monger, S. A. Shoba, C. Ping  
Corresponding: C. Monger, [cmonger@nmsu.edu](mailto:cmonger@nmsu.edu)

### 4. Micromorphology of soils in extreme environments

Conveners: L. Sullivan, B. Buck  
Corresponding: B. Buck, [buckb@unlv.nevada.edu](mailto:buckb@unlv.nevada.edu)

### 5. Urban and technogenic soils

Conveners: A. Lehmann; H. Eswaran; W. Burghard.  
Corresponding: W. Burghard, [wolfgang.burghardt@uni-essen.de](mailto:wolfgang.burghardt@uni-essen.de)

### 6. Micromorphology for paleopedology and loess

Conveners: D. Sauer, N. Fedoroff, A. Bronger, G. Humphreys  
Corresponding: D. Sauer, [d-sauer@uni-hohenheim.de](mailto:d-sauer@uni-hohenheim.de)

### 7. Micromorphology for archeology

Conveners: S. Kapur, A. Tsatskin, M. Courty, P. Goldberg  
Corresponding: M. Courty, [courty@tautavel.univ-perp.fr](mailto:courty@tautavel.univ-perp.fr)

### 8. Soil Genesis and classification

Conveners: M. Wilson; G. Stoops, A. I. Faz, S. Mahmoodi  
Corresponding: A. Faz, [angel.fazcano@upct.es](mailto:angel.fazcano@upct.es)

### 9. Ultra-micro technologies and image analysis

Conveners: R. J. Heck, A. R. Mermut, F. Terribile  
Corresponding: A. R. Mermut, [mermut@skyway.usask.ca](mailto:mermut@skyway.usask.ca)

### 10. Micromorphology in other sciences

Conveners: R. M. Poch, R. Fitzpatrick, R. Gilkes  
Corresponding: R. M. Poch, [rosa.poch@macs.udl.cat](mailto:rosa.poch@macs.udl.cat)

### 11. Paddy soils

Conveners: G. Zhang, Ringrose-Voase, Siti Zaayah, Y. He  
Corresponding: G. Zhang Ganlin, [glzhang@issas.ac.cn](mailto:glzhang@issas.ac.cn)

### 12. Mountain soils

Conveners: Cui Peng Zhu Bo, RM Poch  
Corresponding: Zhu Bo, [bzhu@imde.ac.cn](mailto:bzhu@imde.ac.cn)

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## Tours/Fieldtrips

### Pre-conference tour

T1: Lasa –Linzhi(Mountain soil)- Chengdu

(Cost: \$1200)

- Sept. 6 Chengdu/Beijing flight to Lhasa
- Sept. 7 Lhasa sightseeing
- Sept. 8 Namtso Lake
- Sept. 9 Linzhi
- Sept.10 Linzhi Cypress Forest
- Sept.11 Linzhi airport dropping off (to Chengdu)

### Mid-conference tour

T2: Sanxindui (paddy soil) + Longqian Hill (purple soil)

(Cost: free)

### Post-conference tour

T3: Chengdu-Jiuzhaigou (Mountain soil)-Chengdu

(Cost: \$550)

- Sept. 16 Chengdu-Jiuzhaigou
- Sept. 17 Jiuzhaigou
- Sept. 18 Jiuzhaigou-huanglong-Maoxian
- Sept. 19 Maoxian-Dujiangyan-Chengdu

T4: Chengdu-Chongqing-Zhongxian(Purple soil)-Yichang

(Cost: \$800)

- Sept. 16 Chengdu-Chongqing (bus)
- Sept. 17 Zhongxian (bus)
- Sept. 18 Zhongxian-Yichang (overnight ship)
- Sept. 19 Yichang airport dropping off

T5: Xian(Terra-cotta Warriors; loess)-Beijing(Great Wall)

(Cost: \$600)

- Sept. 16 Chengdu-Xi'an (flight)
- Sept. 17 Xi'an (overnight train)
- Sept. 18 Beijing (Great Wall)
- Sept. 19 Beijing airport dropping off

Please visit the conference website (<http://icsm.imde.ac.cn>) for detailed information.

## IMPORTANT DATES

- Jul 1, 2007 First Announcement
- Dec 1, 2007 Second Announcement
- May 30, 2008 Deadline for Abstract Submission
- Aug 15, 2008 Third Announcement
- Sep 11-16, 2008 Conference

The IUSS will be offering three \$500 awards (a total of \$1500) to people from developing countries to attend the 13<sup>th</sup> International Conference on Soil Micromorphology, Chengdu China, Sept. 11-16, 2008. Those who are interested in getting this funding should contact Ahmet Mermut at the following email address: [mermut@skyway.usask.ca](mailto:mermut@skyway.usask.ca)



## Proposed Symposia for the 19<sup>th</sup> World Congress of Soil Science by Commission 1.1 Soil Morphology and Micromorphology

- ***Expected Changes in Soil Morphology in Response to Global Climate Change.***

Soils are expected to change under a warmer Earth but the types of modification and the rate of change are difficult to predict since it is not only temperature but also the amount and distribution of rainfall. This symposium will explore what soil parameters (i.e. organic matter content, salinity, erosion, mineral alteration, crusting) are likely to change at local and regional scales. Soil morphology and micromorphology can be used to measure these changes. By studying a suite of soil conditions from natural, little disturbed sites to sites of recent recovery we are able to glean a picture of what is likely to happen. This symposium will provide a basis for updating earlier viewpoints as expressed in books such as Scharpenseel et al (1990) and Bouwman (1990), which will be 20 years old at the time of the congress.

- ***Soils in Extreme Environments: Earth and Beyond***

Extreme environments on Earth drive soil processes to their limits. This symposium will present the current state of research on extreme processes in soils. Whether hyper-arid to hyper-humid; acid to alkaline, cryic to tropical, on active volcanoes, inert materials or hypertoxic environments: what soil morphologic characteristics are produced? What are the extreme limits on life? And can they be used as analogs for extraterrestrial processes? We will explore these and other aspects of soils in extreme environments.

- ***Soil Morphology and Micromorphology to Identify, Prevent, and Manage Environmental Hazards.***

Many environmental and geologic hazards (landslides, earthquakes, floods, surface heave/collapse, pollution/contamination of water resources) can be identified and mitigated through the use of soil morphology and/or micromorphology. This symposium will explore the soil morphologic indicators that can be used to identify soil processes that either cause or exacerbate environmental hazards.

Commission 1.1 Contacts:

Dr. Brenda J. Buck, Chair [buckb@unlv.nevada.edu](mailto:buckb@unlv.nevada.edu)

Dr. Rosa M. Poch, Vice Chair, [rosa.poch@macs.udl.cat](mailto:rosa.poch@macs.udl.cat)

Dr. Geoffrey Humphreys, 2<sup>nd</sup> Vice Chair, [ghumphre@els.mq.edu.au](mailto:ghumphre@els.mq.edu.au)

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## **Vale Geoff Humphreys**

It was with great sadness and regret that soil scientists around the world learnt that Associate Professor Geoff Humphreys of Macquarie University, Sydney, Australia died suddenly on Sunday 12 August 2007. He had been out jogging through bushland near his home when he suffered a heart attack. He was only 54.

Geoff was a highly respected and valued member of the Australian and international soil science community. He was renowned as a committed and tireless researcher and teacher with phenomenal levels of energy and productive output. His passion for understanding processes of soil formation and landscape development was an inspiration to all of us. Geoff played an active role in the IUSS and the Australian Society of Soil Science (ASSSI), and his passing is a terrible loss to soil science. The tributes to Geoff that have come from friends and colleagues all around the world bear testimony to the high esteem in which he was held.

Geoffrey Steel Humphreys was born in Sydney in 1953, and brought up in that city, being the eldest of five children. The early death of his father when he was only 7 years old thrust responsibility and a leadership role onto Geoff as he helped to care for his younger brothers and sisters, no doubt contributing to his strong authoritative character in later years. As a teenager, Geoff excelled in many sports, particularly rugby where he had a reputation as a skilled and tough hooker. He was a very accomplished scout, becoming a Queen Scout and was a prefect at his high school. During these years Geoff developed a love of hiking and adventure activities; he revelled being outside and exploring the wonders of nature. His brothers report of the long hard days they had out hiking in the wilderness, where Geoff pushed them all to their limits, all in the name of fun!

Geoff enrolled as an undergraduate at Macquarie University in the early 1970s, initially studying economics but soon transferring to the earth sciences where his real interests lay. He excelled at his studies and graduated with First Class Honours and was encouraged to move directly onto a PhD. In the following years Geoff pursued his doctorate part time whilst working in the highlands of Papua New Guinea and at the University of PNG, and raising a young family with his wife Janelle, his close and loving companion for the next 30 years. He gained his doctorate in 1985, and after a couple of years teaching at the University of NSW, took up a position in a multi-disciplinary team in the Land Management Program of the Research School of Pacific Studies at the Australian National University. This saw him return to PNG and also to other parts of Asia and the Pacific and even Africa for long field seasons. Geoff was fascinated by the spectacular and highly dynamic landscapes of these countries, which he investigated with boundless enthusiasm. He was also concerned about the extent of erosion and other land degradation that was common throughout these countries.

In 1994, Geoff returned to Macquarie University, teaching and continuing his research into processes of soil formation and landscape evolution. He particularly focused on the role of soil dwelling organisms, producing undeniable evidence of their significance in soil formation. In this work he brought together the disciplines of

pedology, geomorphology and ecology, a unique approach and one that led to groundbreaking ideas. His collaboration with colleagues Ron Paton and Peter Mitchell led to the publication in 1995 of *Soils : a new global view*, a book that presented radically new ideas on processes of soil formation. The model they proposed placed a much greater emphasis on biotic and geomorphic processes such as bioturbation and surface wash, and less on the traditionally accepted pedogenic processes such as vertical movement of clay by eluviation. The book received international acclaim and in 1999 the three authors were awarded the GK Gilbert Award for Excellence in Geomorphic Research by the Association of American Geographers. This prestigious award is only given every three years and this was the first time it had gone outside America. In an article titled *Shock the World (and then some)*, Randall Schaetzl included it within the four most groundbreaking and influential treatises on geomorphology and pedology of the 20th Century. Other reviewers put the book at the front of a paradigm shift in the understanding of soil genesis. Receiving the award in America on behalf of the trio must have been one of the proudest moments in Geoff's career. He continued to collaborate with Ron Paton on soil genesis issues right up to his death, with two papers critically evaluating the zonalistic foundations of soil science in the USA having just been published in *Geoderma* (2007, vol. 139).

Geoff recognised the critical importance of detailed quantitative observations of soil morphology at the macro and micro scales. In collaboration with others in Australia and internationally, he sought to unlock secrets of pedology revealed by soil morphological features, generating an impressive publication output along the way. He enthusiastically adopted and promoted new innovative techniques in his studies. He had recently made exciting insights into soil and landscape genesis with Macquarie University associates Marshall Wilkinson, Paul Hesse and others with the use of innovative soil dating techniques involving luminescence dating and cosmogenic radionuclides. Amongst other things, their results suggest that many soils in Australia are considerably younger than previously thought. Geoff was instrumental in the establishment of the Soil Morphology and Micromorphology Commission of the IUSS, which he chaired from 2002 to 2006 and was currently 2<sup>nd</sup> Vice Chair. In this role he is said to have breathed new life into the morphological study of soils. More generally Geoff has been credited with paving the way for a truly modern, interdisciplinary approach to pedology, one that effectively incorporates geomorphological and ecological principles, and this is perhaps the primary legacy of Geoff's career.

In addition to his fine research contributions, Geoff will be remembered as a great teacher and advocate of soil science and scientific research in general. As an Associate Dean of Research at Macquarie University, he was an energetic contributor on several postgraduate and research guiding committees. He was active in ASSSI, and was currently on the organising Committee of the Brisbane 2010 World Congress, as well as with his IUSS responsibilities. For 11 years he was co-editor of the *Australian Geographer* journal. He was a great communicator, always managing to clearly convey his ideas and inspire others with his enthusiasm. Although he was known to ruffle feathers at times with his strongly held views, this was always done in a spirit of constructive good will.

Geoff was widely admired for his commonsense and wisdom. He was the one that friends and colleagues turned to for sage advice, being described as “the tribal elder” of his Department (even though he wasn’t that old!). Although initially he could appear almost intimidating, especially with his tough gravelly voice, his great warmth of character and good humour quickly became evident. Seeing Geoff enjoying a good belly laugh over a beer was a common sight on field trips. His description as an “affable old bear” was very apt. An essentially modest man, Geoff rarely referred to his own achievements, always preferring to sing the praises of others, particularly his students.

Geoff, so many of us are deeply saddened and upset by your sudden passing. We’re going to miss your warm friendship, illuminating discussions and guiding hand. So many of us had plans for exciting collaborations with you that now cannot be. But we are all grateful for the time you spent with us and for helping us to understand soils. Thank you and farewell Geoff.

Jonathan Gray and others  
Macquarie University, Sydney



Photo courtesy of the University of Delaware, taken at 18th World Congress of Soil Science Gala Dinner, Philadelphia, July 2006

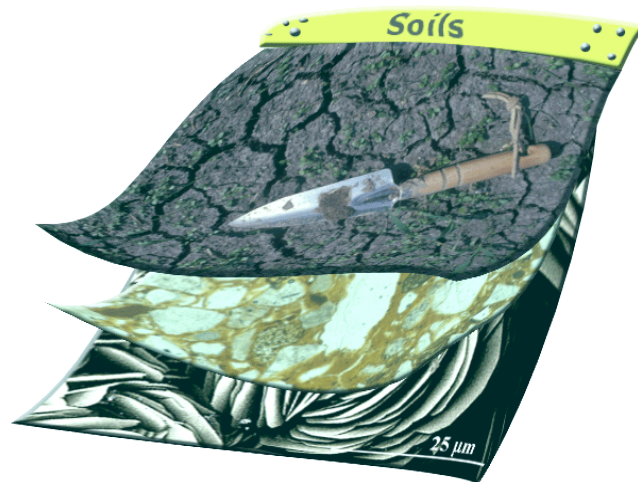
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*International winter school*

# **Soil Micromorphology & Soil Mineralogy**

*February 11–16<sup>th</sup> 2008  
Portici-Napoli (Italy)*



**UNIVERSITÀ di NAPOLI FEDERICO II**

**FACOLTA' di AGRARIA**  
DISSPAPA  
Scuola di Dottorato in VGRA

*in collaboration with:*

**FACOLTA' di SCIENZE MM.FF.NN.**  
DST  
**CNR-ISAFoM**  
**SISS**

# **Soil Micromorphology & Soil Mineralogy**

*February 11–16<sup>th</sup> 2008, Portici-Napoli*

*This course emerges from the awareness that a thorough knowledge of the microscopic spatial distribution of soil features and soil minerals (including clay minerals) may assist scientists from many disciplines to understand and use soils as well as to deal with a variety of applied soil researches.*

*The course is suitable for beginners in related disciplines who already have a good basic knowledge of soil science, but also for those who already use the soil micromorphology and mineralogy in their work and wish to extend their knowledge of basic principles, more specialised techniques and applications.*

## **Aims of the course**

- to provide a robust introduction to soil micromorphology and mineralogy
- to enable the student to be self-reliable on their applications

## **Prerequisite**

- Good basic knowledge of soil science
- Knowledge of the English language

## **Scientific Program**

**MONDAY February 11<sup>th</sup>, 2008**  
DISSPAPA, via Università, 100

Registration of participants.

Introduction at the school: objectives and

P. Adamo - Soil mineralogy: general introduction, chemical and structural concepts of soil primary and secondary minerals with special

P. Adamo, F. Ugolini - Surface chemistry of soil

F. Ugolini - Mineral equilibria in soil and

(optional) - visit to a soil micromorphology lab, CNR-ISAFoM, via Patacca 85 Ercolano

**TUESDAY February 12<sup>nd</sup>, 2008**  
DISSPAPA, via Università, 100

F. Ugolini - Mineralogy and soil genesis

F. Terribile - Analytical techniques for identification and characterization of soil

P. Adamo - X-ray diffraction (XRD): principles, the Bragg's equation, the X-ray diffractometer, operative conditions sample preparation

S. Vingiani - X-ray identification of clay minerals: routine and auxiliary treatments

S. Vingiani, P. Adamo - Provisionally dedicated to practical XRD experiments

**WEDNESDAY February 13<sup>rd</sup>, 2008**

F. Terribile - Introduction to soil microscopy; optical microscopy

P. Adamo - Principles of electron microscopy (SEM, TEM) and

V. Morra, L. Fedele - Basics of optical mineralogy and mineral identification

L. Fedele, L. Franciosi - Microscopic minerals identification

**THURSDAY February 14<sup>th</sup>, 2008**  
DST, via Mezzocannone 8 Napoli

E.A. FitzPatrick, F. Terribile - Micromorphological analysis: Descriptive

E.A. FitzPatrick - Soil structure, soil fabric,

E.A. FitzPatrick - Soil micromorphological features and microscopic observation of soil

**FRIDAY February 15<sup>th</sup>, 2008**

DST, via Mezzocannone 8 Napoli

E.A. FitzPatrick - Soil micromorphological features and microscopic observation of soil thin sections

**SATURDAY February 16<sup>th</sup>, 2008**

DST, via Mezzocannone 8 Napoli

Hands on session "are you able to tell what is happening in this soil?"

Conclusive remarks and delivering of student certificates

## **ORGANIZING COMMITTEE**

**Coordinators:** Prof. Fabio Terribile & Prof. Paola Adamo  
DISSPAPA – Università di Napoli Federico II, ITALY

### **Secretary**

Dr. Luciana Minieri  
DISSPAPA – Università di Napoli Federico II  
Via Università 100, 80055 Portici (Napoli), ITALY  
E-mail: [fisicadelsuolo@unina.it](mailto:fisicadelsuolo@unina.it)  
Tel. +39(0)812539219; Fax +39(0)812539186

## **LECTURERS**

Dr. E.A. FitzPatrick - Department of Plant and Soil Science, University of Aberdeen  
Prof. Fiorenzo Ugolini - Dipartimento di Scienza del Suolo e Nutrizione della Pianta, Università di Firenze  
Prof. Fabio Terribile, Prof. Paola Adamo, Dr. Simona Vingiani, Dr. Luciana Minieri - DISSPAPA, Università di Napoli Federico II  
Prof. Vincenzo Morra, Dr. Lorenzo Fedele, Dr. Luigi Franciosi - DST, Università di Napoli Federico II  
Dr. Giacomo Mele - CNR Istituto per i Sistemi Agricoli e Forestali del Mediterraneo

## **INSTITUTIONS**

### **Università di Napoli Federico II**

Dipartimento di Scienze del Suolo, della Pianta, dell'Ambiente e delle Produzioni Animali (DISSPAPA)  
Dipartimento di Scienze della Terra (DST)  
Dottorato di Ricerca in Valorizzazione e Gestione delle Risorse Agroforestali

### **Consiglio Nazionale delle Ricerche**

Istituto per i Sistemi Agricoli e Forestali del Mediterraneo (CNR – ISAFoM)

### **Società Italiana di Scienza del Suolo (SISS)**

Commissioni di Fisica del Suolo e di Mineralogia del Suolo

### **Società Italiana di Pedologia (SIPE)**

## **APPLICATION**

A maximum of 20 students will be accepted.  
Application form (see below) should be sent to the secretary by January 15, 2008 by either e-mail [fisicadelsuolo@unina.it](mailto:fisicadelsuolo@unina.it) or fax +39(0)812539186

First name: \_\_\_\_\_

Family Name: \_\_\_\_\_

Affiliation: \_\_\_\_\_

\_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Country: \_\_\_\_\_

Age: \_\_\_\_\_

Gender:            F                    M

Fax no: \_\_\_\_\_

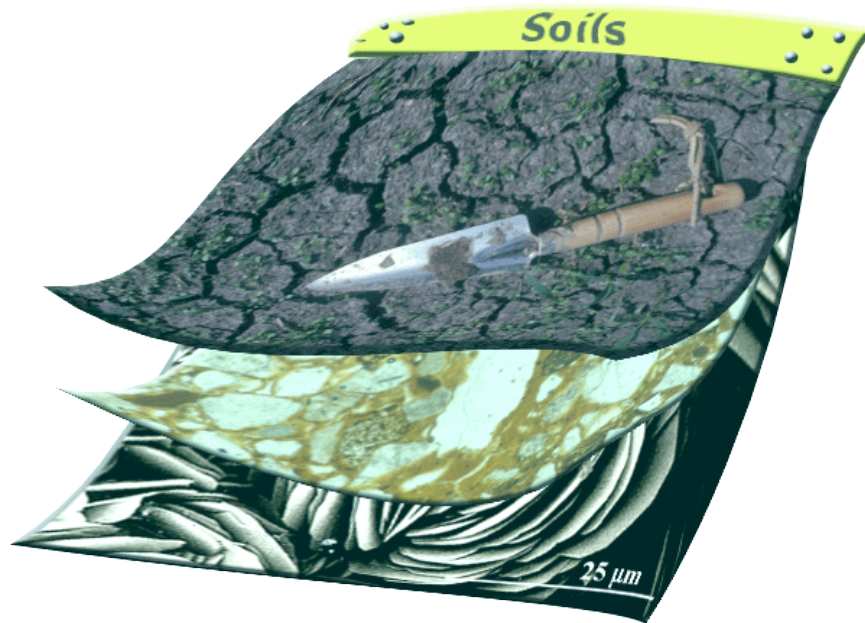
E-Mail: \_\_\_\_\_

*To be returned by January 15, 2008 by either fax or e-mail*

*International winter school*

# **Soil Micromorphology & Soil Mineralogy**

*February 11–16<sup>th</sup> 2008  
Portici-Napoli (Italy)*



## **FINANCIAL ARRANGEMENTS**

Registration fee is 250 €.

Participants have to pay their own expenses including accommodation, own travel expenses and cost of living.

Selected applicants will be notified and the registration fee will have to be paid by January 25, 2008.

## **ACCOMMODATIONS**

Different arrangements can be made depending on the participant personal choice. A list of accommodation in Naples and in Portici will be sent later. Housing can include small hotels, private room and rooms (2-3 beds for each room) in the Napoli Youth Hostel. The cheapest solution seems to be rooms in the Napoli Youth Hostel



13<sup>th</sup> International Conference on Soil Micromorphology 2008 (ICSM)

**Report on the Pre-conference Meeting at Chengdu  
27th May-2<sup>nd</sup> June 2007**

Host institution and organizer: Institute of Mountain Hazards and Environment, Chinese Academy of Sciences (IMHE, CAS)

**Pre-Conference Meeting Organizer:**

Prof. Xiubin He

Conference Executive Chairman, Institute of Mountain Hazards and Environment (IMHE, CAS)

**Overseas participants:**

Prof. Ahmet Mermut

Chair Division 1. Soil in Space and Time (IUSS) - University of Saskatchewan, Canada

Prof. Geoff Humphreys

2<sup>nd</sup> Vice Chair Commission 1.1. Morphology and Micromorphology (IUSS) – Macquarie University, Australia

Prof. Rosa M Poch

Vice Chair Commission 1.1. Soil Morphology and Micromorphology (IUSS) – Universitat de Lleida, Spain

**Outline**

Panel participants arrived on 26 (RM Poch and G Humphreys) and 27 May (A. Mermut).

Business meetings were held on Monday 28 May and 1 June. Field trips on 27 May (Poch, Humphreys), 29-31 May and 1 June (all) and 2 June (Mermut).

**Welcome Meeting, Keynote Presentations and Business Meeting 28th May**

Participants:

Prof. Cheng Genwei

Vice-director IMHE

Ass Prof. Ms Zhang Ning

International Officer IMHE

Prof. Xiubin He

Prof. Ahmet Mermut

Prof. Geoff Humphreys

Prof. Rosa M Poch

Prof. Yurong He IMHE

Dr. Donhong Xiong IMHE

Dr. Hongyi Zhou Conference Secretariat, IMHE

After opening remarks talks were presented by overseas guests (Humphreys, Mermut & Poch). Prof. Xiubin He reported on progress to date since September 2004 in Adana, which included (1) exchange of formal letters between Commission C1.1 and the Institute of Mountain Hazards and Environment, Chinese Academy of Sciences and National Natural Science Foundation of China; (2) finalizing the logo and announcements of the forthcoming ICSM to other institutions, conferences and web pages. Prof Mermut stressed the importance of the neighbouring countries in the conference, mainly middle and far east, and offered support from the IUSS for their participation.

Prof. Yurong He reported on Soil Micromorphology in China and provided copies of the Journal of Mountain Science, issued by the IMHE, which contained papers applying soil micromorphology.

### **Business Meeting 1 June.**

Participants:

Prof. Xiubin He  
Prof. Ahmet Mermut  
Prof. Geoff Humphreys  
Prof. Rosa M Poch

The following issues were discussed:

- Establishment of an organizational structure
  - International Organising Committee
  - Local Organising Committee
  - Scientific Honorary Committee
  - Scientific Committee
- Plans for Sessions
- Abstracts and publication of selected papers
- Key dates.

Extensive feedback was provided to Prof. He. In particular the membership of all committees was modified and extensive discussions were held on sessions and potential contributors. Lists of potential key contributors were drawn up so that they could be contacted by individuals of the panel. Previous experience indicates that this approach works well. A revised plan for sessions was also reviewed and modified, resulting in 12 sessions covering the fields of soil genesis, management, environmental functions of soils and new methods. In addition, special sessions on paddy and mountain soils were included. Conference participants will be asked to provide abstracts, two pages in length, for publication as Conference Proceedings. This publication is to seek to be registered with ISBN. Selected full papers will be considered for publication in a special issue of an international journal (talks will be held with Elsevier re. *Geoderma* and possibly *Catena*) and in the Journal of Mountain Science (IMHE).

In addition detailed discussions were held on field trips which resulted in various recommendations being offered especially in terms of the balance between the scientific content and cultural add-ons.

In particular it was noted that the field trips need to be planned to include at least two scientific stops per day and details need to be provided to participants. Suggested basic information for field guides include:

- Geology (regional scale to more detailed depending on availability; distribution patterns should be shown by way of maps, cross-sections etc.)
  - age of major units
  - composition (mineralogy and elemental)
  - structure
  - landforms
- Detail site
  - landscape position and aspect
  - altitude
  - climate (rainfall, temperature, seasonality)
  - landuse (existing, natural vegetation)
- Soil
  - morphology (profile description, cross sections such as toposequence)
  - micromorphology
  - chemistry (especially nutrient based)
  - mineralogy (especially clay minerals)
  - age (including any archaeological context)
  - special features (e.g. high erodibility; landslide prone; flood prone; paddy fields in use for >2000 years as part of a highly sustainable cropping system)

Overall this has been a successful process and it could be adopted as practice for future meetings.

The web page of the conference ([www.imde.ac.cn](http://www.imde.ac.cn)) will be updated according to the result of the discussions in the business meetings, including the list of sessions, the call for abstracts and conference field trips.

### **Field Trips**

Participants:

Prof. Xiubin He

Ass. Prof. Yangchun Wang

Dr. Donhong Xiong

Dr. Hongyi Zhou

Dr. Yibei Xu

Prof. Yurong He

Two trips were undertaken:

- (i) A paddy soil and archaeology at Sanxingdui with its museum, and the river works at Dujiangyan. This trip will form the basis of be the mid-conference tour.
  - (ii) The purple soil country which involved a 3 day >1500km roundtrip from Chengdu to Nanchong, Zhongxian (overnight), Shibaozhai, Chongqing (overnight) and Chengdu with visits to various cultural features (Xishan Park, Shibaozhai temple, Three Gorges Museum) and some stops to examine soils and landuse. This trip is half of one of the post-conference tour, devoted to the Three Gorges reservoir.
  - (iii) Subsequently we also visited the Panda Park and Chengdu markets.
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# ***The 1<sup>st</sup> International Conference on HYDROPEDOLOGY***

*Conference Theme –*

## ***Water and Soil: Key to Sustaining the Earth's CRITICAL ZONE***

**July 28-31, 2008**

**The Pennsylvania State University  
University Park, PA, USA**

### ***Conference Goal and Objectives***

The goal of this inaugural international conference is to advance the emerging interdisciplinary field of hydropedology and to promote its synergistic collaborations across scientific disciplines, including soil science, hydrology, geomorphology, geology, ecology, biogeochemistry, and others. Hydropedology integrates multiple disciplines to address interactive pedologic and hydrologic processes and landscape-soil-hydrology relationships across space and time, aiming to understand pedologic controls on hydrologic processes and properties, and hydrologic impacts on soil formation, variability, and functions.

The specific objectives of this conference are:

1. *To take stock and analyze what has been accomplished so far in hydropedology and to identify where gaps are and how hydropedology can deliver unique contributions to soil and water sciences;*
2. *To promote exciting breakthrough collaborations among soil science, hydrology, geomorphology, and other related bio- and geosciences communities, aiming at synergistic strategies for advancing one another;*
3. *To charter a roadmap for international collaboration to advance the frontiers of hydropedology and the Critical Zone science, including their fundamental research, practical applications, and interdisciplinary education and outreach.*

### ***Important Dates***

- **March 1, 2008:** Abstract deadline
- **April 15, 2008:** Notification of abstract acceptance and presentation format and the program final schedule
- **May 1, 2008:** Early registration deadline

### ***Targeted Audience/Participants***

Researchers, educators, government employees, consultants, and students interested in the interface between soil science, hydrology, geomorphology, and other related bio- and geo-sciences. Participation by students, postdocs, and the developing country scientists are encouraged. Anticipated number of participants: 100-200 people.

### ***Broad Topics of the Conference***

- Emerging concepts and theories in soil science, hydrology, and the Critical Zone science
- Fundamental concepts and principles of hydropedology and current knowledge gaps
- Frontiers of integrated and multiscale models that address landscape-soil-hydrology relationships
- Soil architecture/structure: Its formation, evolution, and functional manifestations across scales
- Functional assessment of soil architectures and landscape patterns with respect to hydrology
- Advanced monitoring/sensing and mapping technologies, instrumentation, and visualization
- Coupling/integrating pedology, soil physics, hydrology, biogeochemistry, ecohydrology, and others
- Role of hydropedology in spatial land-use planning, water quality protection, stormwater management, climate change, space exploration, and environmental policy and regulations
- Education of the next generation of soil scientists, hydrologists, geoscientists, and environmentalists

### ***For Further Information***

**Visit:** <http://hydropedology.psu.edu/>