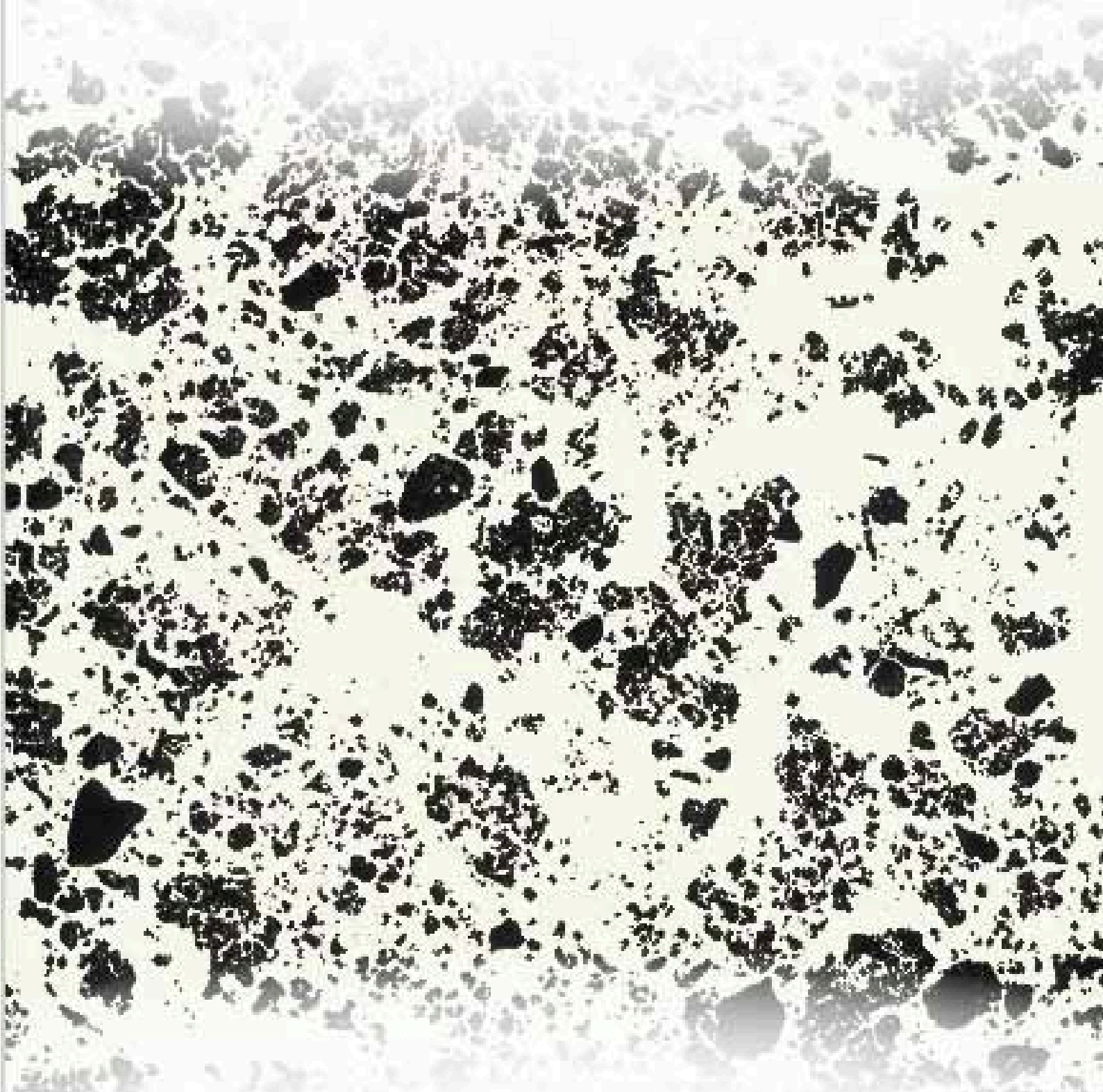


COMMISSION 1.1

SOIL MORPHOLOGY & MICROMORPHOLOGY

International Union of Soil Sciences



NEWSLETTER OCTOBER 2018, Vol. 23, p. 1- 27

Layout and design: CRISP
Cover: Crumb microstructure observed in a soil block observed under oblique UV light (from E.A. FitzPatrick collection)

Comm. 1.1. Soil Morphology and Micromorphology - IUSS

Summary

NEW COMMISSION OFFICERS 2018-2022	4
LETTERS FROM COMMISSION OFFICERS	5
Letter from the Chair	5
Letter from Chair and co-Chair	6
PILLS OF WISDOM for soils and soil scientists	7
MINUTES OF THE BUSINESS MEETING OF COMMISSION 1.1.....	9
2018 YOUNG MICROMORPHOLOGY PUBLICATION AWARD	12
21ST WORLD CONGRESS OF SOIL SCIENCE IN 2018: A SHORT OVERVIEW	13
FORTHCOMING MEETINGS	14
A GRAPHICAL OVERVIEW OF OUR RESEARCH PAPERS.....	16
RESEARCH NOTES, BOOKS AND PUBLICATIONS	17
FORTHCOMING COURSES.....	18
IN MEMORIAM TO JOSEFINA BENAYAS.....	19
IN MEMORIAM TO MARIA RAIMONDA USAI	21
ADDITIONAL CONDOLENCE NOTES (Fitz and Josefina)	22
DETAILED REPORT ABOUT THE 21 st WCSS.....	24
THE LAST PAGE	27

NEW COMMISSION OFFICERS 2018-2022

The new elected officers of Commission 1.1. Soil Morphology and
Micromorphology:

Chair: **Fabio Terribile** (Italy) 1894 votes
fabio.terribile@unina.it

Vice-Chair: **Richard J. Heck** (Canada) 1959 votes
rheck@uoguelph.ca

LETTERS FROM COMMISSION OFFICERS

Letter from the Chair

Dear friends & colleagues, this newsletter is the first produced by the new Commission 1.1. The Commission started its activity at the World Congress of Soil Science held in Rio de Janeiro this past August.

Here, I have both the obligation and the pleasure to thank the previous Commission 1.1 board, and especially prof. Rosa Poch who lead this Commission through the many IUSS activities. I clarify immediately that it will be impossible for me to match Rosa's dedication and care! Thanks Rosa; remember that we shall always need your support !

I am very happy to share the Commission 1.1 work with Richard Heck acting as Co-Chair. We got to know each other at the IUSS WCSS in Rio, but from the first moments there was a very good understanding and support.

From my placement as Commission 1.1 Chair I have received many attestation of esteem for which I thank you; moreover, I was happily surprise by the availability of about 11 of you - soil scientists - to collaborate in the Commission 1.1 work. This is very important sign ! We shall use this extra power ! THANKS :))

Best wishes
Fabio

Fabio Terribile Chair, IUSS Commission Soil
Morphology and Micromorphology
Napoli, October 2018

Letter from Chair and co-Chair

Dear all, here we start making it clear that the new commission 1.1 wants to pursue strengthening and networking in the field of soil micromorphology, continuing our tradition. However, we believe that it is necessary to further strengthen the linkages of soil micromorphology with the many other fields of soil science research, such as soil physics, soil functions, ecosystem services etc., to realize the transdisciplinary power of soil micromorphology, as has been the case with our active archaeological community

In addition, we would like to clarify that we would like to get some interest on the other word - often overlooked but still present - in the title of our commission, namely "morphology". We believe that it requires more attention, and a better connection with the soil micromorphology and other areas of soil science. In this view, we intend to establish relationships with the current Working Group on Digital Soil Morphometric (<http://digitalsoilmorphometrics.org/>).

Today, it is self-evident that soil morphology and micromorphology somehow occur in many research fields and they "contaminate" many scientific papers. It is right to be proud of this. However, it is necessary to maintain an important group spirit and complicity within our community, to face the great societal challenges of modernity where soils play an absolutely central role in the sustainable management of our landscape.

Let's move to the newsletter. In this issue you will find a new design with the aim of ensuring continuity with the previous newsletter style (produced by UdL) while incorporating several new elements. These include the cover image, which will vary with each newsletter number, variations in font and colour and the presence of new sections. In particular, with this specific issue we inaugurate a section named "pills of wisdom". These are invited contributions requested from some of our "GREAT" soil scientists on important issues that must concern us as Commission 1.1. Here we start with a very challenging and inspiring contribution by Johan Bouma.

With respect to the general newsletter content, of course you are all invited to suggest ideas and contributions to improve our newsletter.

Meanwhile, Good Reading!

Fabio Terribile & Richard Heck
IUSS Commission Soil Morphology and Micromorphology

PILLS OF WISDOM for soils and soil scientists

Dear reader, this is a new section of our newsletter devoted to publish small contributions from some of our MAJOR soil scientists, who decided to share with us some of their thoughts on key issues relevant for our Commission. This section is thought to be also open to receive some reactions, comments, suggestions, etc.

In this number we are very much delighted to publish the contribution from prof. Johan Bouma. Johan is special because in himself he combines (still) a top-level soil scientist and a person having a deep understanding of the policy and stakeholder arenas, then applications of our scientific work. This unique combination give a special depth to his thoughts.

Then Johan thanks very much !

Every soil has a story to tell: the soil morphologist acting as interpreter.

Soil science is a vital discipline where research in the last few decades has resulted in significant advances in our knowledge and understanding of soil processes , their quantitative characterization and interpretation. Just think of digital mapping, pedometrics, creating databases, models, proximal sensing etc. Recently, quantification of soil morphological features has been introduced by the Digital Soil Morphometrics working group of IUSS, initiated by Alfred Hartemink of the University of Wisconsin in the USA. Soil Science is a very broad field. The IUSS has four Divisions, 22 Commissions and 19 Working Groups covering a wide variety of topics. There is a risk of too much scatter, while we face very serious worldwide environmental challenges that we read about daily in the popular press showing an increasing societal awareness.

Certainly, the soil science community is aware of the need to cooperate with other disciplines in facing up to the challenges ahead, which have been articulated very well in the UN Sustainable Development Goals (SDG's) to be achieved by 2030. (e.g Lal et al, 2018). Even though soils are not specifically mentioned, soils, obviously, are of crucial importance to achieve goals such as food security, water protection , climate mitigation and ecosystem and biodiversity preservation. Our toolkit is large and filled with an impressive array of modern methods. Our databases have been developed and filled during the last decades. But there is, in my view, at this time, the need for a moment of reflection, asking ourselves whether or not we are developing our expertise in the best possible way including presentation to the outside world.

I am worried about some aspects. Just an arbitrary example: hydrologists, agronomists, climatologists and ecologists use our data, but dynamic soil behavior in a landscape context cannot adequately be represented by single sets of soil characteristics, such as, for example, texture, %C and Bulk Density, that are readily available in databases and are used to develop pedotransfer functions. We should continuously be engaged in the context of interdisciplinary studies to avoid mistakes. Are we? Let 's not forget that our profession started by pioneers, considering soils as living bodies in living landscapes, basing their insights initially on visual observations of soils and landscapes: soil morphology in its purest form. Of course, increasingly

measurements of various kinds were successfully made to document observations and theories. Every soil type has a story to tell about her genesis and her dynamic properties. She tells that story in her own language that we cannot understand and we need to act as (modest) interpreters, starting by observing and interpreting soil morphology in a pit. Morphology is the source of pedology. But we still don't understand major parts of her story! Do we spend enough time in the soil pit, our source, or are we too busy in developing yet another measurement or survey technique, model or database, staying away from the field?

This brings me to Commission 1.1. of the IUSS, studying "soil morphology and micromorphology". I believe that this commission has a crucial task in re-connecting us with the basic soil story, to guide us back to our source and let us see and wonder. I am worried about the "sand" syndrome in some of our subdisciplines, implicitly assuming that soils are isotropic and homogeneous. We know the examples: mixing a soil sample to measure the average Fe content while micromorphology shows that iron can occur as cutans on the walls of peds or macropores, suggesting water movement from the inside out, neocutans in the soil matrix next to neoalbans, showing that water must have moved from the outside of the peds to the inside, or as matrix glaeboles with either sharp edges due to pedoturbation or diffuse edges due to local formation in a stable matrix. Such observations, and there are many comparable ones on other issues, indicate that "the soil story" can be much more informative when micromorphology is applied, next to soil chemical, -physical and -biological techniques. Or better: that these techniques are applied considering soil morphological features rather than being made by depth classes. But much can also be done focusing on macromorphology. Just another arbitrary example of the "sand syndrome". Describing sizes and shapes of peds in clay soils, allows information on preferential movement of water along macropores, bypass flow and internal catchment when water accumulates subsurface in dead-end macropores. This cannot be described with standard flow theory, assuming homogeneity. We sometimes find wilting plants on clay soils that should, according to standard theory, have enough "available" water. But if roots grow on the vertical surfaces of prisms, they may not be able to pull the water out: a case of "water inaccessibility". Standard soil structure descriptions have been assembled in databases but are hardly used. They can assist in defining flow patterns in real soils when coupled with innovative soil physical techniques. .

I suggest that soil researchers should always start their programs in the field, dig pits, be silent for a while and take time to look at the soil, formulating hypotheses and making appropriate measurements thereafter. If available methods can't deliver, develop new ones. In other words: re-establish the link between field and lab, and make results obtained part of fascinating storylines, presented on behalf of the soil, reflecting what we have learned bit-by-bit about the incredible and impressive complexity of the living soil. We should not forget that, in contrast to animals and plants, soils are invisible to outsiders. What they see and hear is new to most of them. I am always fascinated to see the enthusiastic reactions of visitors to the ISRIC Soil Museum in Wageningen: for many a new world has been discovered. So, soil morphologists have played a key role in articulating what soils can tell us. They should keep doing so in future.

Johan Bouma

Em.prof soil science, Wageningen University, the Netherlands.

Reference: Lal, R., R.Horn and T.Kosaki (Eds), Soil and Sustainable Development Goals. GeoEcology Essays. Catena Soil Sciences. Schweizerbart Scientific Publishers. Stuttgart, Germany.

MINUTES OF THE BUSINESS MEETING OF COMMISSION 1.1.

“Soil Morphology and Micromorphology” Rio de Janeiro, Brazil, August 2018

The business meeting for Commission 1.1 Soil Morphology and Micromorphology was held at the Windsor Convention Center, Barra de Tijuca, Rio de Janeiro (Brazil), on Monday, 13 August at 14:30, within the frame of the 21th Congress of the International Union of Soil Science

In Attendance: Rosa M Poch (Chair), Richard J Heck (Vice-Chair), Fabio Terribile (Elected Chair), participants of the 21th IUSS congress.

1. Opening

The meeting was opened and the agenda adopted.

2. Minutes

The minutes of the last meeting held on November 29th 2016, in Mexico City, were accepted.

3. Introduction Officers

The elected IUSS Officers for the term 2018-2022 concerning Commission 1.1. are: IUSS Division I. Soils in Space and Time

Chair: Erika Michéli

IUSS Commission 1.1. Soil Morphology and Micromorphology

Chair: Fabio Terribile

Vice-Chair: Richard J Heck

4. Mexico 2016: Publication of Proceedings

As it was agreed during the business meeting in Mexico, two special issues will be published. They contain 14 papers, which are already accepted and either published or being processed, all of them open access:

- Boletín de la Sociedad Geológica Mexicana, January 2018, vol. 71, issue 1; Guest Editors: Rosa M Poch, Fabio Scarciaglia. It is dedicated to the memory of Nicolas Fedoroff and it contains 6 papers*
- Spanish Journal of Soil Science, July 2018, vol.8 issue 2. ; Guest Editors: Héctor Cabadas, Peter Kühn. It is dedicated to Prof. Georges Stoops in occasion of his 80th anniversary and it contains 8 papers*

5. Young Micromorphologist Publication Award (YMPA-2018)

As announced in the last Commission newsletter, the YMPA 2018 has been awarded to:

Diogo Noses Spinola for the paper: “Eocene paleosols on King George Island, Maritime Antarctica: Macromorphology, micromorphology and mineralogy” Catena 152 (2017) 69–81

The Jury was composed by: Carmen Gutiérrez-Castorena, Richard J Heck, Irina Kovda, Rosa M Poch and Fabio Scarciaglia.

6. IUSS congress Rio 2018 commission 1.1.

The following symposia proposed by Commission 1.1 in the present IUSS Congress are being held:

- *Structural Indicators of Soil Quality using X-ray Computed Tomography (RJ Heck)*

The availability of x-ray computed tomography to study soil has become quite widespread. Advancements in CT image processing enables the extraction of 3D morphometric parameters of soil phases. Various spatial analysis techniques are also now being applied to both segmented and greyscale imagery. This capacity is increasingly being directed to furthering our understanding of the impact of human activities (especially agricultural land management systems) and environmental changes on soil structural properties.

- *Using soil morphology and micromorphology as indicators of soil health (RM Poch)*

Soil health is defined as the continued capacity of soil to function as a vital living system, within ecosystem and land-use boundaries, to sustain biological productivity, promote the quality of air and water environments, and maintain plant, animal, and human health. The diagnostic of soil health needs reliable morphological and micromorphological indicators, in order to assess the impact of land management practices on it.

- *How soils were formed and how do they look now? (Joint Symposium Commission 1.1. and 1.6.). Specific morphological and micromorphological properties observed in paleosols and polygenetic soils may serve as valuable indicators of past environments. It is however essential that such observations are appropriately interpreted in order to obtain reliable reconstructions of palaeo-environments. Thus, this session focuses on the interpretation and use of palaeo-environmental indicators, in particular the micromorphological ones.*

7. Publications

Georges Stoops sent information about two important publications:

- G. Stoops and C. Nicosia (Eds.) 2017 "Encyclopedia of Archaeological Soil and Sediment Micromorphology". Wiley.
- Stoops G, Marcelino V & Mees F (Eds) 2018 "Micromorphological features of soils and regoliths, 2nd Edition." Elsevier.

8. Courses

The Chair informs about the success of the intensive micromorphology course that took place in Tremp (Catalonia), from 25 September to 6 October 2017. A next similar course will probably take place during September-october 2019 in the same place.

9. Kubiëna Award 2018

The Kubiëna Medal was introduced by Subcommission B - Soil Micromorphology of the ISSS to commemorate the memory of Walter L Kubiëna for his distinguished contribution to soil micromorphology. It is the only medal awarded by the IUSS and is given for outstanding and sustained performance in the discipline of soil micromorphology and to date there have been eight awards: E. Yarilova, R. Brewer, H.J Altemüller, G. Stoops, E.A FitzPatrick, L. Wilding, H. Mucher, N. Fedoroff and R. Miedema. It is presented at the IUSS Congress.

As announced in the last Commission newsletter, the Kubiëna Medal 2018 has been awarded to: Maria Inokentievna Gerasimova.

The selection committee was composed by: G. Stoops, L. Wilding, H. Mucher, R. Miedema, RM Poch, RJ Heck.

In absence of Maria Gerasimova, the medal is received by Irina Kovda.

At this point, the past chair, Rosa M Poch, thanks all the help received throughout the two periods she chaired Commission 1.1. by the Vice-Chair Richard J Heck and by the micromorphology community and gives floor to the new elected chair, Fabio Terribile.

10. Memorial EA FitzPatrick

Fabio Terribile made a short overview about the great achievement obtained by E.A. FitzPatrick in Soil Micromorphology and Soil Classification.

11. Newsletter and Web page

An open discussion was performed about the future of Commission Web page and newsletter. It was decided that the new officers will evaluate possible alternatives about how to update and to reinforce both issues

12. Future courses

No immediate courses were proposed but both Lleida and Napoli universities plan to propose some micromorphology courses in the near future.

13. ICSM 2020 - Krakow

It was decided that the new officers will contact organisers to plan the Krakow ICSM meeting

14. Q & A

No questions arisen.

End of the Business Meeting at 15:20.

Signed

Rosa M Poch, Chair 2010-2018

Fabio Terribile, Chair 2018-2022

2018 YOUNG MICROMORPHOLOGY PUBLICATION AWARD

Commission 1.1: Soil Morphology and Micromorphology award the Young Micromorphologist's Publication Award at the World Congress of Soil Science (WCSS is in Rio de Janeiro, August 2018).

The purpose of this award is to encourage and promote the use of soil micromorphology by young scientists. The Award is given by a selection Committee (in this occasion: Carmen Gutiérrez-Castorena, Richard Heck, Irina Kovda, Rosa M Poch, Fabio Scarciglia) to one or more young scientist (<35 yrs) who has published research - in an international journal with wide distribution- in the preceeding 4 years. This paper must represent an outstanding contribution to the principles, methodology, or application of micromorphology.

In the occasion of the Commission 1 business meeting at WCSS in Rio the 2018 YMPA has been awarded to **Diogo Noses Spinola** as the first author of the paper:

Spinola, D. N., de Castro Portes, R., Schaefer, C. E. G. R., Solleiro-Rebolledo, E., Pi-Puig, T., & Kühn, P. (2017). Eocene paleosols on King George Island, Maritime Antarctica: Macromorphology, micromorphology and mineralogy. Catena, 152, 69-81.

Congratulations Diogo !

21ST WORLD CONGRESS OF SOIL SCIENCE IN 2018: A SHORT OVERVIEW

Here, and in the final Annex, we report an overview about the main symposia strictly connected with our Commission activities at the 21ST WORLD CONGRESS of SOIL SCIENCE in 2018 in RIO de JANEIRO

C1.1.1. Using soil morphology and micromorphology as indicators of soil health

Soil morphology and micromorphology can effectively be used for the diagnosis of the soil quality status regarding its ability for performing multiple functions as e.g. crop production, biodiversity conservation or resilience in front of climate change and other impacts.

C1.1.2. Structural Indicators of Soil Quality using X-ray Computed Tomography

The main objective of this symposium is to bring together scientists who are working on various aspects of x-ray CT image processing and analysis (especially those involved in segmentation, morphometric and spatial analysis), with those working on soil quality (particularly structural aspects), to present and discuss recent advancements and tendencies, and identify current needs and opportunities.

C1.1.3. (Joint symposium with Comm. 1.6 Paleopedology) How to use micromorphology to understand palaeosols and polygenetic soils?

The main objective of this session is to encourage colleagues to present examples that may teach us how to identify (micro)morphological properties of palaeosols and polygenetic soils that can be used as indicators of palaeo-environmental conditions.

FORTHCOMING MEETINGS

2018-2019 INTERNATIONAL SOILS MEETING

January 6-9, 2019 | San Diego, CA

Division: SSSA Division: Pedology

Session title: **Recent Advances and Applications in Soil Micromorphology**

Oral (includes student competition)

Organizers: Craig Rasmussen and Danny Itkin

Moderator: Danny Itkin

Format: Oral Topical Session

Keywords: micromorphology

Session Description: This session aims to regenerate and encourage the use of soil micromorphology in the SSSA. Soil micromorphology is applicable for a wide range of research topics, from pedology and mineralogy, to agriculture and geoarchaeology. The members of all Divisions of Interest are invited to participate and share their experience and ideas regarding this promising multidisciplinary method. transient greenhouse warming

INTERNATIONAL WORKSHOP ON ARCHAEOLOGICAL SOIL MICROMORPHOLOGY

Basel, Switzerland, 2nd to 4th September 2019

Organising Committee (Philippe Rentzel, Kristin Ismail-Meyer, Christine Pümpin, Sarah Lo Russo, David Brönnimann)

For info: geoarchaeology@unibas.ch

Save the date for ICSM 2020 - INTERNATIONAL CONFERENCE ON SOIL MICROMORPHOLOGY – Kraków 30 August – 3 September 2020

VENUE: Jagiellonian University in Krakow, 3rd Campus, Gronostajowa Str.

CONFERENCE ORGANIZERS

- International Union of Soil Science, Division 1. Soil in Space and Time, Commission 1.1 - Soil morphology and micromorphology
- Soil Science Society of Poland
- Jagiellonian University in Krakow
- Agricultural University in Krakow
- Warsaw University of Life Sciences – SGGW

NATIONAL ORGANIZING COMMITTEE

- Ryszard Mazurek (Agricultural University, Krakow) – CHAIR
- Wojciech Szymański (Jagiellonian University, Krakow) – VICE-CHAIR
- Łukasz Uzarowicz (Warsaw University of Life Sciences – SGGW) – SECRETARY
- Marek Drewnik (Jagiellonian University, Krakow)
- Bartłomiej Kajdas (Agricultural University, Krakow)
- Przemysław Mroczek (Maria Curie-Skłodowska University, Lublin)
- Zbigniew Zagórski (Warsaw University of Life Sciences – SGGW)
- Tomasz Zaleski (Agricultural University, Krakow)

GENERAL SCHEDULE

24–30 August 2020- Micromorphology Course

–the course should be finished 29/30 August

30 August – 3 September 2020 – Main Conference

30 August (Sunday) – registration (in the afternoon) and ice-breaking party, Faculty of Forestry, Agricultural University in Krakow;; visit in the Museum of Soils

31 August (Monday) – registration, opening session, plenary sessions, poster session 1, afternoon: visit in the Krakow city center (undergrounds beneath the Main Market Square, a walk around the city center, dinner in a restaurant)

1 September (Tuesday) – Plenary sessions, poster session 2, IUSS Business Meeting, Gala Dinner

2 September (Wednesday) – Mid-conference excursion (Kraków and its close vicinities)

3 September (Thursday) – Plenary sessions, summary and closing ceremony

4, 5 and 6 September 2020 – Post-Conference Excursion. (from Friday to Sunday)

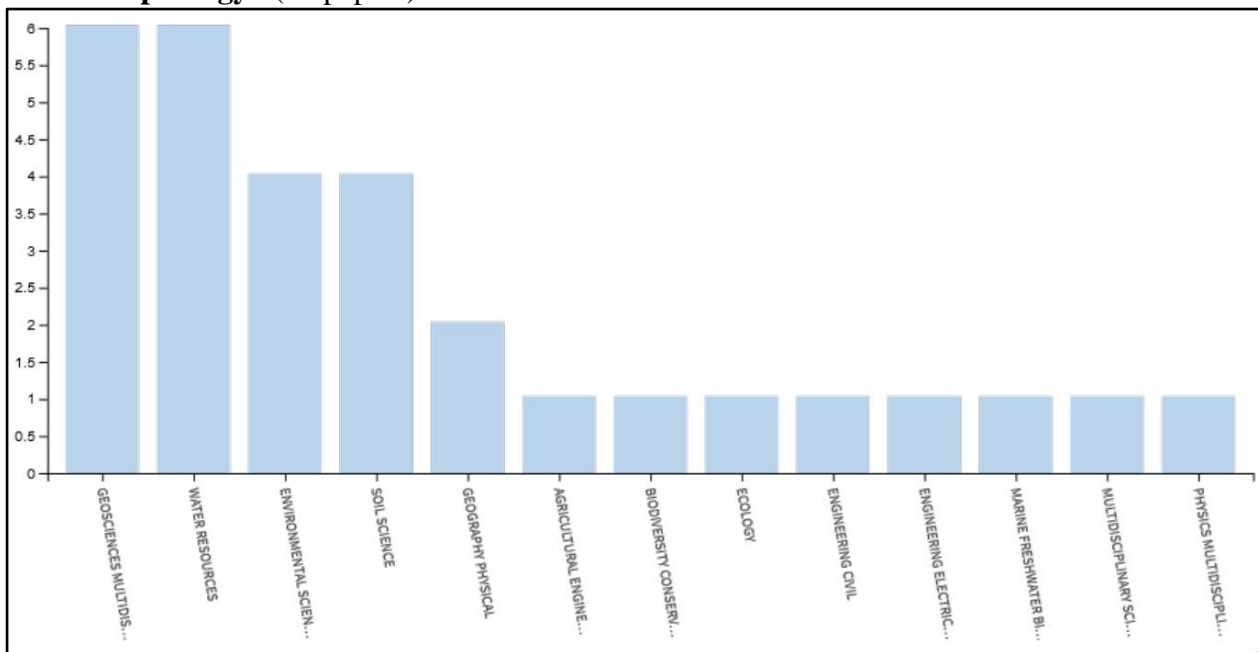
–Polish Upland tour with emphasis on: contemporary soils (e.g. Chernozems, soils developed on gypsum and carbonate rocks), paleosols in loess, influence of metal mining on soil environment etc.

A GRAPHICAL OVERVIEW OF OUR RESEARCH PAPERS

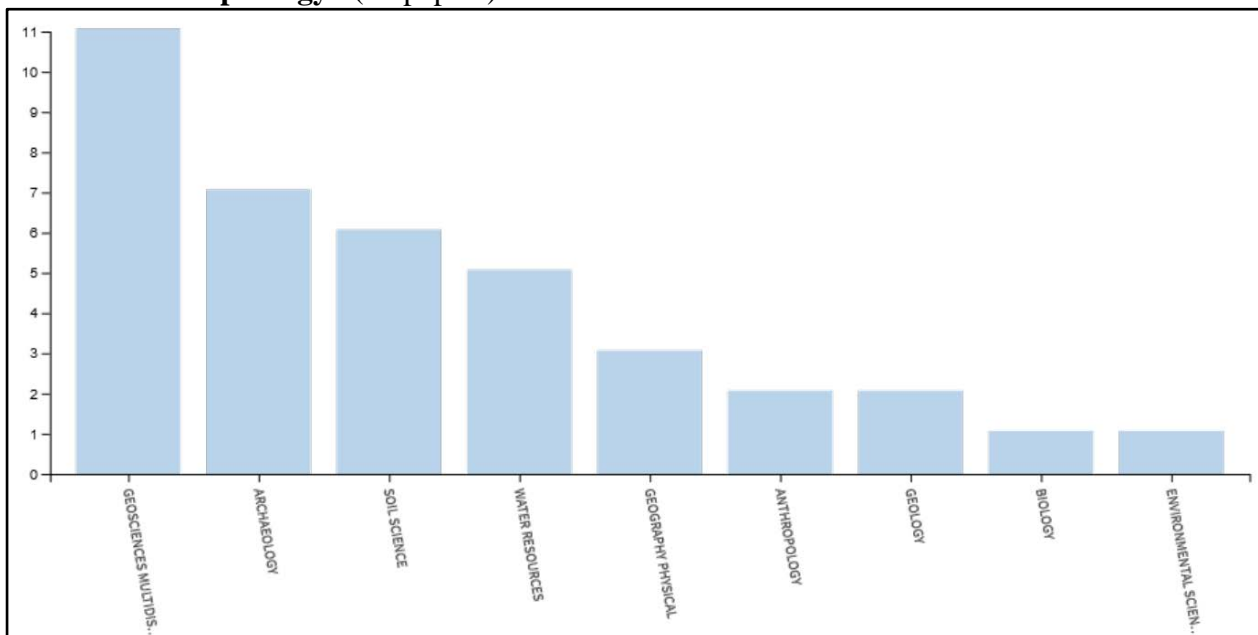
Here we report a graphical overview (after WoS) about the occurrence of papers (31/10/2017-31/10 2018) – ranked for subject science category - having “soil micromorphology” and “soil morphology” as topic. Of course each paper can be ascribed to more than one science category.

The overall picture provides a rapid view about the strength of both soil micromorphology and soil morphology as linkage between different disciplines.

“Soil Morphology” (13 papers)



“Soil Micromorphology” (20 papers)



RESEARCH NOTES, BOOKS AND PUBLICATIONS

- **Boletín de la Sociedad Geológica Mexicana**, January 2018, vol. 71, issue 1; Guest Editors: Rosa M Poch, Fabio Scarciglia. It is dedicated to the memory of Nicolas Fedoroff and it contains 6 papers.
<https://sjss.universia.net/issue/view/177>
- **Spanish Journal of Soil Science**, July 2018, vol.8 issue 2. ; Guest Editors: Héctor Cabadas, Peter Kühn. It is dedicated to Prof. Georges Stoops in occasion of his 80th anniversary and it contains 8 papers.
<http://boletinsgm.igeolcu.unam.mx/bsgm/index.php/siguiente-numero-next-issue>
- **Micromorphological features of soils and regoliths - 2nd Edition**, 2018 Stoops G, Marcelino V & Mees F (Eds) Elsevier.
- **Reconstructing Archaeological Sites: Understanding the Geoarchaeological Matrix – Second Edition**
by Panagiotis Karkanias, Paul Goldberg. ISBN: 978-1-119-01640-3
Aug 2018, Wiley-Blackwell, 296 pages
For more information consult the website: <https://www.wiley.com/en-us/Reconstructing+Archaeological+Sites%3A+Understanding+the+Geoarchaeological+Matrix-p-9781119016403>
- **The Soils of Turkey**, Kapur, Selim, Akça, Erhan, Günal, Hikmet (Eds.)
The book is dedicated to E.A. FitzPatrick; ISBN 978-3-319-64392-2 Springer
World Soil Book Series
- **Catena Special Issue. A Tribute to Ewart A. FitzPatrick (1926-2018), a life for Pedology and Morphology of Soils - Selim Kapur, E.A.C.Costantini, Selahattin Kadir, Claudio Zucca, Karl Stahr (Eds) Volume 168, Pages 1-152 (September 2018)**

FORTHCOMING COURSES

Archaeological Soil Micromorphology – Training: 5th-8th Nov 2018, Practice Days and Workshop: 9th-10th Nov 2018 – Location: Institute of Archaeology (Room 412); UCL Institute of Archaeology; 31-34 Gordon Square, London

Ongoing: online appendices and online videos and can be found at:

<https://geoarchaeology.github.io/asma/>

Master of Advanced Studies In Archaeology (Universitat de Barcelona) - Course in Geoarchaeology and Soil Micromorphology in Archaeology: Language: Spanish

<http://www.ub.edu/estudis/en/mastersuniversitaris/eaarqueologia/introduction>

http://www.ub.edu/prehist/images/pdf/MASTER_x_Mail_ANG.pdf

Contact: M. Mercè Bergadà bergada@ub.edu / master.arqueologia@ub.edu

IN MEMORIAM TO JOSEFINA BENAYAS

Josefina Benayas passed away on June 29th 2018 in Madrid, Spain, at the age of 85. We have lost a great person and an outstanding scientist. She graduated in 1955 in Pharmacy at the Complutense University of Madrid (UCM) where she also joined the Edaphos club in 1951 on invitation by its founder, Prof. Jose M^a Albareda, Full Professor in pedology. The aim of this club was to train young scientists in soil science. Working under the direction of Profs J.M. Albareda and F. Smithson, she was awarded a PhD from the same University in 1957, and two years later, in 1959, from the University College of North Wales, currently University of Bangor (UK). She was awarded the Extraordinary Prize for Undergraduate Work and then the Extraordinary Prize for Doctoral Work at the UCM.

Dr. Benayas earned research fellowships from the Spanish Science Research Council (CSIC) in 1956-1957, the Juan March Foundation (1958) and the British Council (1959). She became a Research Associate at the CSIC in 1960 and finally, in 1971, she obtained a position as Research Scientist at this institution to which she devoted her entire professional life.



Supervised by Profs. J.M. Albareda and Walter Kubiëna (1965-1970), she specialized in the genesis of soils and sediments using soil micromorphological techniques in the Institute of Pedology and Plant Biology (Instituto de Edafología y Biología Vegetal, IEBV), being one of the advantaged students of Prof. Kubiëna during his repeated stays at this Institute in Madrid. Between 1982 and 2001 she was founding member and coordinator of the Spanish Group of Soil Micromorphology of the Spanish Society of Soil Science (SECS) and from 1968, until her retirement in 1997, she was the head of the Laboratory for Soil Micromorphology in the former Institute of Pedology and Plant Biology. Many researchers from universities and

institutes from Spain and abroad got their training in micromorphology under her direction, and both Spanish and foreign scientists came to Madrid to ask her advise in micromorphological issues.

Dr. Benayas played an important role in the development of micromorphology, not only in Spain where she formed a complete generation of scientists, but also abroad. She supervised several doctoral theses and specialization courses on petrographic microscopy and soil micromorphology. She is the author of two monographs on soil micromorphology and numerous articles that have been published in international and

national scientific journals. Her monograph “Atlas de Micromorfología de Suelos e Introducción a la Micromorfología” (1982) contains the first published collection of colour slides of micromorphology, a great help for students and scientists. As a tribute to Prof. Kubiëna, a commemorative meeting was held at the IEBV at the 50th anniversary of the publication of his treatise “Micropedology” (1938). This meeting included several sessions in which Dr. Benayas had an outstanding contribution, describing her activities in collaboration with the deceased author, also remembering the publication in 1953 of the book "The Soils of Europe", edited by the CSIC, which includes reproductions of the magnificent watercolour plates of representative soil profiles. She contributed significantly with her ideas and experience in the development of an international description system for soil micromorphology.

The Women and Geology Commission of the Spanish Geological Society, during the Tribute to our pioneers meeting, held on the VIII Spanish Geological Congress (Oviedo, 2012) distinguished Dr. Benayas as a pioneer in the field of soil micromorphology.

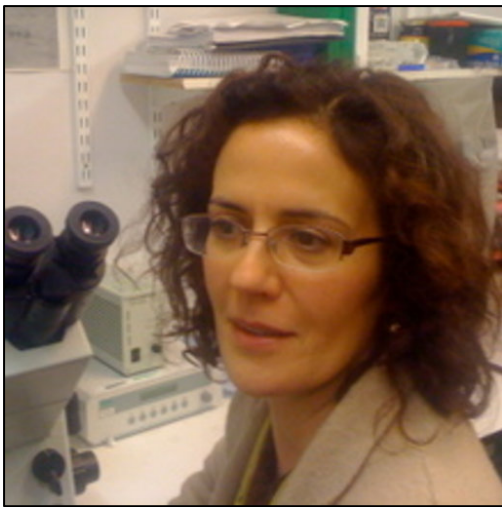


Her thin sections collection, whose original description can be obtained through this link, is composed of 244 samples. The original thin sections of this collection are deposited in the Institute of Agricultural Sciences (Instituto de Ciencias Agrarias, Madrid), and are part of the historical heritage of the CSIC.

Beyond her scientific merit, which acquires particular relevance for her condition of woman and the time when she lived, she was a great daughter, spouse, mother of six sons and daughters, grandmother, workmate, and friend. Always side-by-side and never in front of people, her transparent, generous and dedicated life provided her with the recognition of everybody around her. Certainly, we would live in a better world if we were capable of imitating her. Her example is her best legacy.

IN MEMORIAM TO MARIA RAIMONDA USAI

Maria Raimonda (Memì) Usai left us on the night of May 12, after a long illness. Maria



Raimonda graduated at Cagliari University in the mid-80s and obtained a PhD at Reading University with a thesis in paleopedology, specializing in the study of soil micromorphology. She has worked as geopedologist and geo-archeologist at English Heritage for Northern England, based at the University of York. Her many publications refer to this expertise. Her work contributed to overcome the paradigm of an archaeological research strictly based on historical basis; thus contributing, step by step, to introduce pedology and micromorphology methods and

techniques in archaeological research. She worked for a long time in the area of Hadrian's Wall, which, possibly, it was for her the most important and engaging research topic.

For three years she has been a research scientist at the Department of Architecture and Planning at University of Sassari. Here she holds courses on pedo-archeology, with numerous micromorphology exercises. In 2015 she organized in Alghero the International Conference on Geology and Pedology in archaeological research and cultural heritage, which was attended by about sixty geo and pedo-archeology scholars from many parts of the world. This was an especially important event, also much rewarding for her.

She left in silence, as her way of life, as the gentle Lady she has always been.

Translate from <http://www.pedologiasipe.it/in-ricordo-di-maria-raimonda-usai/>

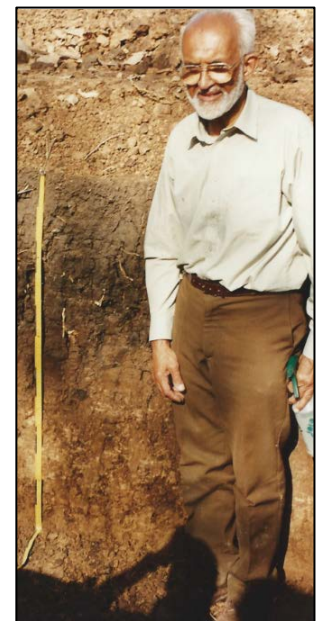
ADDITIONAL CONDOLENCE NOTES (Fitz and Josefina)

Condolence note for EA FitzPatrick

We deeply regret the passing of Fitz, whom we shall always remember with a great affection. We send our condolences to his wife whom we met during a supper we enjoyed at their home in Aberdeen.



Fitz visited Argentina twice and he taught two postgraduated courses in our University. We also shared with him field trips in the Pampean



Region which included our traditional “asados” (barbecues). Later in Scotland we were shown a variety of soils in the vicinity Aberdeen, many of which with properties derived from periglacial activity.

During long field and laboratory chats, and also by letter, he suggested the possibility of cryogenic processes in the Pampean Region.

In this respect, we mention his participation and thinking about this subject in a recent publication of the Soil Science Society of Argentina.

Thanks a lot Fitz for your teachings conveyed with affection, generosity and humour. That’s all folks, as he usually said.

Professors Perla Amanda Imbellone and Jorge Eloy Giménez
Facultad de Ciencias Naturales y Museo.
National University of La Plata. Argentina.

Condolence notes for Josefina Benayas Casares

Josefina Benayas graduated in Pharmacy at the Complutense University of Madrid in 1955. Working under the direction of Profs J.M. Albareda and F. Smithson, she received a PhD from the same University in 1957, first, and two years later, in 1959, from the University College of North Wales, currently University of Bangor (UK). She earned research fellowships from the CSIC (1956-1957), from the Juan March Foundation (1958) and from the British Council (1959). In 1960 she became a Research Associate at the CSIC and finally in 1971 she obtained a position as Research Scientist. Supervised by Profs José María Albareda and Walter Kubiëna (1965-1970), she specialized in the genesis of soils and sediments using soil micromorphology techniques in the former Institute of Pedology and Plant Biology (Instituto de Edafología y Biología Vegetal), being one of the advantaged students of Prof Kubiëna during his repeated stays at this Institute in Madrid. Between 1982 and 2001 she was founding member and coordinator of the Spanish Group of Soil Micromorphology of the Spanish Soil Science Society (SECS) and from 1968, until her retirement in 1997, she was the head of the Laboratory for Soil Micromorphology in the former Institute of Pedology and Plant Biology (Instituto de Edafología y Biología Vegetal). In that laboratory she received numerous foreign and Spanish researchers, as well as many trainees from universities and other research centers. Dr. Benayas supervised several doctoral theses and specialization courses on petrographic microscopy and soil micromorphology, and has authored hundreds of scientific papers and several books. The Women and Geology Commission of the Spanish Geological Society, during the Tribute to our pioneers meeting, held on the VIII Spanish Geological Congress (Oviedo, 2012) distinguished Dr. Benayas as a pioneer in the field of soil micromorphology.

M. Teresa García González
Director, Institute of Agricultural Sciences
Spanish National Research Council
Madrid, June 2015

DETAILED REPORT ABOUT THE 21st WCSS

By Richard Heck

Abstracts for the joint Symposia C1.1.1/ C1.1.2 and C1.1.3/ C1.6.1, as well as those for all other 21st WCSS symposia, can be accessed through the link: www.21wcss.org/anais/.

The following are listings of the oral and poster presentations presented within Commission 1.1 convened Symposia:

Symposia C1.1.1/ C1.1.2 Oral Presentations:

Monday (Aug, 13)		Room "Galápagos III"	
C1.1.1 C1.1.2		Using soil morphology and micromorphology indicators of soil health Structural indicators of soil quality using X-ray computed tomography	
		Convener: Rosa M Poch, Universitat de Lleida, Lleida, Catalunya, Spain Richard Heck, University of Guelph, Canada	
		Co-Convener: Carlos Schaefer, UFV, Viçosa, Brazil Lars J. Munkholm, Aarhus University, Denmark	
Schedule	ID	Title	Presenter
15:30 – 15:40		Opening	Conveners
15:40 – 15:55	1767	Effects of land use in physical properties in Andean volcanic ashes soils	Melissa Lis-Gutiérrez
15:55 – 16:10	1058	Using micromorphology to assess the physical contamination of topsoil amended with a mixed waste organic output	Stephen Cattle
16:10 – 16:25	1260	Micromorphology of soils under sugar cane in the Cauca Valley, Colombia	Raul Madriñan
16:25 – 16:40	1191	Application of an indicator package for soil structural analysis based on X-ray computed tomography	Tseng Chien Ling
16:40 – 16:55	2717	Assessing long-term effects of zero-till on the porosity of Brazilian soils using X-ray computed tomography	Marcelo Valadares Galdos
16:55 – 17:10	3096	Quantifying the effect of crop rotation on topsoil structure dynamics using X-ray computed tomography	Richard J Heck
17:10 – 17:25	197	Computed tomography-measured pore parameters influenced by cover crops and biofuel management	Stephen H. Anderson
17:25 – 17:40	1831	Linking 3D pore structure to organic carbon contents of Andisols under organic and integrated kiwifruit orchards	Karin Müller
17:40 – 17:55	2440	Quantification of 3D-structures in soil microaggregates	Stephan Peth
17:55 – 18:10	--	Closing	Conveners

Symposium C1.1.1 Poster Presentations:

Code - ID	Title	Presenter
9328 - 3146	EFFECT OF WETTING AND DRYING CYCLES IN GENESIS OF COHESIVE SOIL HORIZONS FROM NORTH-EAST BRAZIL	Juliana Matos Vieira
7170 - 2771	Hydraulic-energy indices and functions associated with micromorphological analysis to evaluate soil structure under integrate crop-livestock system	Aline M. Huf dos Reis
9936 - 2731	Micromorphological comparison of impacted and non-impacted soils un the Sonora River Basin: case of Buenavista del Cobre mine	Maria Yazmin Rivera-Uria
1851 - 3194	Micromorphological study of Thionic Technosols formed of mine tailings: case of ecological restoration of Peña Colorada, Colima Mexico.	Jaime Diaz-Ortega
9467 - 1293	MICROMORPHOLOGY OF SOILS EROSION PROCESSES IN APPLIED URBAN EXPANSION AREA OF THE COASTLINE NORTH OF MACEIÓ-AL	Samuel Vitor Oliveira dos Santos
2117 - 1198	Micromorphology of the superficial horizons of the Yellow Red Acrisol subject to cattle grazing	Antonio Soares da Silva
3068 - 2998	Soil micromorphometric analysis as indicator of the subsurface erosive process genesis	Nayana Alves Pereira

Symposium C1.1.2 Poster Presentations:

Code - ID	Title	Presenter
7268 - 2516	Assessing the consequences of improved plant water use efficiency on soil structure using X-Ray computed tomography	Tinashe Mawodza
5245 - 2689	Assessing the impact of soil-seed contact on water relations for efficient seed germination using X-ray Computed Tomography	Sebastian Blunk
7444 - 2719	Mitigation of soil compaction by the use of cover crops in compacted Oxisol	Altamir Mateus Bertollo
3938 - 1499	Quantifying Soil Structure Dynamics in Agroforestry Riparian Buffers using X-ray Computed Tomography	Anastassia Lagounova
2028 - 1071	Renting the same room: Do roots repeatedly reoccupy the same spaces?	Ivanah Oliver
6729 - 3218	SURFACE CHARACTERIZATION OF AN ENTISOL USING MICROTOMOGRAPHY	CASSIA BEZERRA MACHADO
4186 - 857	Using X-ray Computed Tomography to assess how plant roots can remediate compacted soils via reorganisation of the rhizosphere	Jasmine Burr-Hersey
4550 - 1867	Visualization of soil microstructure under conventional tillage and fallow using micro-focus x-ray computed tomography.	Isaiah IC Wakindiki
9855 - 1040	X-ray computed microtomography against retention curve for assessing porosity in Latossolos (Ferralsols) with contrasting vegetation cover	Marcelo Wermelinger Aguiar Lemes
3223 - 3216	X-Ray Computed Tomography applied to analyze soil structure under different infiltration techniques	Larissa F Costa
3095 - 271	X-ray microtomography analysis of lime application effects on soil porous system	Talita R. Ferreira

Symposia C1.1./ C1.6.1 Oral Presentations:

Tuesday (Aug, 14)		Room "Capri IV"	
C1.1.3 C1.6.1		How to use micromorphology to understand palaeosols and polygenetic soils	
		Human-environment interactions recorded in soils and palaeosols	
		Convener: Sergey Sedov, UNAM, Mexico City, Mexico Elizabeth Solleiro, UNAM, Mexico City, Mexico	
		Co-Convener: Dr. Maria Bronnikova, Russian Academy of Sciences, Moscow, Russia Francisco Sergio Bernardes Ladeira; UNICAMP, Campinas, SP, Brazil	
Schedule	ID	Title	Presenter
15:30 – 15:40	--	Opening	Conveners
15:40 – 15:55	2592	A practical approach to studying iron-rich duricrusts using SEM image analysis	Daniilo de Lima Camêlo
15:55 – 16:10	540	Micromorphology of red palaeosols in Mediterranean loess sequences in the Ebro valley	Rosa M. Poch
16:10 – 16:25	1616	Pedogenesis and paleoenvironmental reconstruction in a sequence of Spodosols in forest-savanna transition area in Roraima	Anna Bárbara De Souza Cruz
16:25 – 16:40	950	Synlithogenic pedogenesis in calcareous archaeological landforms of Israel	Danny Itkin
16:40 – 16:55		Close C1.1.3 / Opening C1.6.1	Conveners
16:55 – 17:10	2750	Main patterns of human-environment interaction during the Holocene recorded in soils of the Kuiavia region (central Poland)	Michal Jankowski
17:10 – 17:25	1633	Micromorphology as a tool for diagnostics of former human environmental interactions within medieval settling areas in different environmental backgrounds	Maria Bronnikova
17:25 – 17:40	1237	Potential application of 239+240Pu in Austria as a soil erosion rates proxy	Raquel Falcao
17:40 – 17:55	1368	Proxies of degraded Acrisols under sloped pastures in the State of Rio de Janeiro (Brazil)	Roman Seliger
17:55 – 18:10	1195	Spatiotemporal landscape changes under human influence recorded in an agrarian kettle hole	W.M. van der Meij
18:10 - 18:15	--	Closing	Conveners

Symposium C1.1.2 Poster Presentations:

Code - ID	Title	Presenter
5583 - 349	Fate of Co-containing phylломanganate: Implications for Co sequestration	Fan Liu
9378 - 1376	Features of Fe-Mn nodules in southern Indiana Loess with a fragipan horizon	Zhong-Xiu Sun
6764 - 954	Micromorphological description for final diagnosis of a non-lithified paleosol – a case in Brazil	Yuri Lopes Zinn
3935 - 400	Micromorphology of two Planosols in Rio Grande do Sul State, south of Brazil.	Luís Fernando da Silva
9841 - 2969	Pedogenesis of Bt horizons in the Marília Formation (Bauru Basin Cretaceous), Brazil.	Diego Sullivan de Jesus Alves
1108 - 607	The unique fabric of pedo- and lithopedogenic gravels in Brazilian savanna soils: archives of soil polygenesis on tropical sedimentary terrains	Yuri L. Zinn

Symposium C1.6.1 Poster Presentations:

Code - ID	Title	Presenter
1148 - 1166	Archaeopedological analyses of Bronze Age land use practices and landscape evolution in Southwest Germany	Sascha Scherer
1535 - 2044	Fire dynamics of a mid mountain range – analytical evidence versus fire modelling	Luisa Wöstehoff
5309 - 2307	Interface between soils, morphogenetic processes, records of past human occupation and environmental changes in the low terraces of the Jacaré-Guaçu river (Boa Esperança do Sul, State of São Paulo, Brazil)	Francisco Sergio Bernardes Ladeira
4658 - 772	The coastal soil of the Atacama Desert, properties, and implications in the conservation of mummified bodies, in the validity of the postmortem chemical result and the inference regarding the health of the ancient human populations	Leonardo Figueroa

THE LAST PAGE

My favorite take-home messages from Johan Bouma letter.

Fabio

- ✓ *...at this time the need for a moment of reflection, asking ourselves whether or not we are developing our expertise in the best possible way.*
- ✓ *Every soil type has a story to tell about her genesis and her dynamic properties.*
- ✓ *She tells that story in her own language that we cannot understand and we need to act as (modest) interpreters*
- ✓ *Do we spend enough time in the soil pit, our source, or are we too busy in developing yet another measurement or survey technique, model or database...?*
- ✓ *This commission has a crucial task in re-connecting us with the basic soil story, to guide us back to our source*
- ✓ *I am worried about the “sand” syndrome in some of our subdisciplines, implicitly assuming that soils are isotropic and homogeneous.*
- ✓ *Such observations...indicate that “the soil story” can be much more informative when micromorphology is applied*
- ✓ *much can also be done focusing on macromorphology.*
- ✓ *I suggest that soil researchers should always start their programs in the field, dig pits, be silent for a while and take time to look at the soil , formulating hypotheses and making appropriate measurements thereafter.*
- ✓ *In other words: re-establish the link between field and lab.*
- ✓ *We should not forget that, in contrast to animals and plants, soils are invisible to outsiders.*

