

# **SPANISH NATIONAL COMMITTEE**

## **IGCP REPORT 2018**



**February 2018**

## Summary

1. Chairman and Secretary of the Spanish National Committee.	1
2. Members of the Spanish National Committee.	1
3. IGCP Projects with participation of Spanish Working Groups and Rapporteurs.	1
3.1. IGCP Projects with Spanish leaders.	
<i>IGCP-637: Heritage Stone Designation.</i>	1
<i>IGCP-655 Toarcian Oceanic Anoxic Event: Impact on marine carbon cycle and ecosystems.</i>	4
3.2. IGCP Projects with Spanish Working Groups (SWGs).	
<i>IGCP 639 "Sea Level Change from Minutes to Millennia".</i>	9
<i>IGCP 640 "S4SLIDE Significance of modern and ancient Subaqueous Slope landSlides"</i>	10
<i>IGCP 652 "Reading geologic time in Paleozoic sedimentary rocks".</i>	14
3.3. IGCP Projects with Spanish Rapporteurs.	
<i>IGCP 653 "The Onset of the Great Ordovician Biodiversification Event".</i>	22
4. National Committee activities.	26
5. IGCP Meetings held during the year 2018 in Spain.	28
6. IGCP meetings planned in Spain for the next year (2019).	28
7. Forthcoming events in connection with IGCPs.	29
8. Suggestions relating to conduct and improvement of the Program.	29
9. Financial support received for the activities of this National Committee and given to IGCP projects and their activities.	31

Cover image: Boot-camp in the Palaeozoic outcrops of the Montagne Noire (France). Coumiac Quarry, Frasnian/Famennian GSSP. Master Students (University of Valencia) and Professors. Photo by Luis Collantes.

## SPANISH NATIONAL COMMITTEE REPORT 2017

### 1. Chairman and Secretary of the Spanish National Committee.

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### 2. Members of the Spanish National Committee.

Dr. Javier Lario (639); Dra. Jau-Chyn Liao (652); Dr. Matías Reolid (655); Dra. María Dolores Pereira (637) Dr. Pablo G. Silva (past member of International Board); Juan José Durán (Geological Survey of Spain) and Santiago Martín Alfageme (Geological Survey of Spain).

The project 640 has a strong Spanish participation, but to date no Group leader has been nominated.

Two projects with unique Spanish participant (Dr. Juan Carlos Gutiérrez Marco 653 and Dr. Rodolfo Gozalo Gutiérrez 668). Both researchers have agreed on acting as Rapporteur of the Spanish contribution to the respective projects.

### 3. IGCP Projects with participation of Spanish Working Groups and Rapporteurs.

#### 3.1. IGCP Projects with Spanish leaders.

##### *IGCP-637: Heritage Stone Designation*

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*Abstract:* During 2018 seven new global heritage stones: Maltese Globigerina Limestone, Jacobsville Sandstone, Lede stone Welsh Slate, Piedra Mar del Plata, Kolmården serpentine marble, and Lioz limestone. The IUGS EC also approved a design for ratified Heritage Stone Resources for posters to be placed with local government agencies or communities and for educational purposes. Two main IGCP meetings were organised in 2018: 1) Global Stone Congress 2018 (24-April/2-May, 2018; Ilhéus - Bahía, Brazil) with 170 attenders from 12 countries and 2) I Workshop on Heritage Stones (2-4 of October, 2018; Salamanca, Spain) attended by 49 participants from 16 countries. Noteworthy the participation of early career researchers as part of the organising committee of the I Workshop on Heritage Stones. Some of them had participated in an ERASMUS Intensive Program on Geoheritage, under the guidance of the meeting's leader who made a call to recruit them for the organisation of the Workshop. This workshop was attended by seven

researchers (four female) from developing countries. The designation of GHSR facilitated the contact of the group with different stakeholders. For example, the designation of Villamayor Sandstone triggered the collaboration of HSS with the council of Villamayor, as a result a poster (as roll-up) was handed to the village related to the designated stone during the I Workshop on Heritage Stones. The group has started to communicate with stakeholders and decision-makers emphasising the need of using the proper/suitable (and original if possible) stone in the restoration of historic buildings, mainly in World Heritage Sites and Cities. This project also provides information on proper characterisation of the heritage stones in order to promote their use in construction and restoration. Finally, a book (the first one of this series) on *Natural Stone and World Heritage*, edited by CRC Press (Taylor and Francis) was published. This first book is dedicated to Salamanca, a World Heritage Site since 1988. It is the first of twelve different books that will be published from 2018 to 2022, with the recognition of IGCP-637 as main trigger for the initiative, involving several of the IGCP participants from different countries.

#### *Publications:*

Proceedings of I Workshop on Heritage Stones:

[https://issuu.com/home/published/compilacion\\_abstract\\_reducido](https://issuu.com/home/published/compilacion_abstract_reducido)

Freire-Lista, D and Fort, R. (2018) Historical City Centres and Traditional Building Stones as Heritage: Barrio de las Letras, Madrid (Spain). *Geoheritage*.

<https://doi.org/10.1007/s12371-018-0314-z>

Navarro, R., Pereira, D., Gimeno, A. del Barrio, S. (2018) Influence of natural carbonation process in serpentinites used as construction and building materials. *Construction and Building Materials* 170, 537–546

Pereira, D., González Neila, C., del Arco, A. (2018) Salamanca, city of Stone and Heritage. Diputación de Salamanca.

Pereira, D. (2018) *Natural Stone and World Heritage: Salamanca, Spain*. Taylor and Francis (ed.) Proceedings of the Global Stone Congress 2018

[https://1drv.ms/b/s!Ai38zqcXGdM\\_h4swDsGLEw5JibAC\\_w](https://1drv.ms/b/s!Ai38zqcXGdM_h4swDsGLEw5JibAC_w)

#### *Meetings*

Global Stone Congress 2018 (24-April/ 2-May, 2018)

I Workshop on Heritage Stones (2-4 of October, 2018)

Extraction of blocks in the historic quarry of Villamayor sandstone.





Villamayor sandstone is one of the first natural stones recognised as Global Heritage Stone Resource, achieving its designation in 2017 after the approval of the IUGS Executive Committee ([www.globalheritagestone.com](http://www.globalheritagestone.com))



The “Rich” façade of the University of Salamanca building



After carving, the golden stone can be admired in façades of historic buildings in Salamanca, representing the Plateresque style.

#### *Planned activities 2019*

The main goal for next year is to tighten the objectives of the IGCP-637, advancing the designation of stones from all over the world as GHSR. Our aim is to include more stones from emerging countries where this resource has not been considered as important as it should, mainly in the field of preservation of Heritage.

EGU 2019, Vienna, where we already have proposed a session: ERE7.2/EOS11.2, Conveners: Dolores Pereira, Gurmeet Kaur and Maria Heloisa Frascá. Heritage Stones: construction and restoration materials for sustainable development.

#### *Outreach activities*

Due to the celebration of the I Workshop on Heritage Stones during the 800th anniversary of the University of Salamanca, many media reports were published in local papers, university of Salamanca and other institutions web pages, IUGS Social Media... Following are some links:

<https://saladeprensa.usal.es/node/115647>

<https://saladeprensa.usal.es/node/115673>

<https://www.lagacetadesalamanca.es/salamanca/2018/10/02/restauracionesanos-70-peligrar-titulo/249817.html>

<http://www.villamayor.es/noticias/villamayor-sigue-presente-en-el-viii-centenario-con-su-piedra-i-workshop-on-heritage-stones.html>

<https://www.salamanca24horas.com/albums/view/58800/i-workshop-on-heritage-stones>

<https://www.facebook.com/iugspage/posts/the-i-workshop-on-heritage-stones-atsalamanca-from-2nd-to-4th-october-was-a-big/1682162815256984/>

Also, the online Global Magazine for Architecture, Art and Design with Natural Stone published an article with the achievements of the IGCP:

<https://www.stone-ideas.com/64790/global-heritage-stone-resource-ghsr/>

*Financial sources:* University of Salamanca, USAL 800<sup>th</sup> anniversary office, Berkeley minera, Villamayor city council, ABIROCHAS (Brazilian Association of Natural Stone Industry), IUGS and IGCP.

### ***IGCP-655 Toarcian Oceanic Anoxic Event: Impact on marine carbon cycle and ecosystems***

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*Abstract:* Contributions during 2018, have improved T-OAE knowledge from different approaches and topics. Main advances deal with three major research topics: 1) Sedimentology and stratigraphy: The study of sedimentary successions of the Pliensbachian-Toarcian, around the world has been focused on the interpretation of cyclostratigraphy as well as the characterisation of the organic matter. Many works have been focused on the geological record interpretation regarding the interaction among oceanographic changes, climatic changes and carbonate productivity, whereas other works have been focused on the incidence of volcanism on the palaeoenvironmental change; 2) Incidence of the T-OAE on marine communities: The analysis of foraminiferal morphogroups has been used with very good results on the South Spain outcrops for characterising the incidence of the biotic crisis and the recovery of the foraminiferal assemblages. Relevant advances have been obtained concerning the incidence of the T-OAE on the macroinvertebrate communities, mainly brachiopods, bivalves and cephalopods. Many works have been focused on the body size trends of organisms at the Early Toarcian extinction event as on belemnites; and 3) Geochemistry, environmental conditions and palaeoclimatology: Stable isotopes geochemistry ( $\delta^{13}\text{C}$ ,  $\delta^{18}\text{O}$ ) have a great potential for determining carbon cycle perturbation, palaeotemperature, palaeoceanographic changes and interpreting enhancing of

hydrological cycle. The  $\delta^{13}\text{C}$  have been analysed on belemnites but commonly on organic matter. Also, the poorly studied  $\delta^{15}\text{N}$  has been used for interpreting the palaeoenvironmental conditions. Redox sensitive elements were used for interpreting oxygen depleted conditions as well as the diameter of pyrite framboids. Some works have focused the interpretations in the potential development of euxinic conditions during the T-OAE. Besides numerous papers, an international workshop and a special session within an international meeting were organised. The former resulted in the publication of a special monographic book *The Toarcian Oceanic Anoxic Event in the Western Iberian Margin and its context within the Lower Jurassic evolution of the Lusitanian Basin* to be published by Springer editorial.

#### *Publications:*

##### *Peer-review papers*

Ait-Itto, F.Z., Martínez, M., Price, G.D., Ait-Addi, A., 2018. Synchronization of the astronomical time scales in the Early Toarcian: A link between anoxia, carbon-cycle perturbation, mass extinction and volcanism. *Earth and Planetary Science Letters* 493, 1-11.

Baeza-Carratala, J.F., Garcia Joral, F.G., Goy, A., Tent-Manclus, J.E., 2018. Arab-Madagascan brachiopod dispersal along the North-Gondwana paleomargin towards the Western Tethys Ocean during the Early Toarcian (Jurassic). *Palaeogeography Palaeoclimatology, Palaeoecology* 490, 252-268.

Baroni, I.R., Pohl, A., van Helmond, N.A.G., Papadomanolaki, N.M., Coe, A.L., Cohen, A.S., van de Schootbrugge, B., Donnadieu, Y., Slomp, C.P., 2018. Ocean Circulation in the Toarcian (Early Jurassic): A Key Control on Deoxygenation and Carbon Burial on the European Shelf. *Paleoceanography and Paleoclimatology* 33, 994-1012.

Fantasia, A., Föllmi, K.B., Adatte, T., Spangenberg, J.E., Montero-Serrano, J.C., 2018. The Early Toarcian oceanic anoxic event: Paleoenvironmental and paleoclimatic change across the Alpine Tethys (Switzerland). *Global and Planetary Change* 162, 53-62.

Fantasia, A., Föllmi, K.B., Adatte, T., Bernárdez, E., Spangenberg, J.E., Mattioli, E., 2018. The Toarcian Oceanic Anoxic Event in southwestern Gondwana: an example from the Andean Basin, northern Chile. *Journal of the Geological Society* 175, 883-902.

Fonseca, C., Mendonca Filho, J.G., Lezin, C., Duarte, L.V., Faure, P., 2018a. Organic facies variability during the Toarcian Oceanic Anoxic Event record of the Grands Causses and Quercy basins (southern France). *International Journal of Coal Geology* 190, 218-235.

Fonseca, C., Mendonca Filho, J.O., Lezin, C., Duarte, L.V., 2018b. Thermal maturity assessment study of the late Pliensbachian-early Toarcian organic-rich sediments in southern France: Grands Causses, Quercy and Pyrenean basins. *Marine and Petroleum Geology* 91, 338-349.

García Joral, F., Baeza-Carratalá, J.F., Goy, A., 2018. Changes in brachiopod body size prior to the Early Toarcian (Jurassic) Mass Extinction. *Palaeogeography Palaeoclimatology, Palaeoecology* 506, 242-249.

Han, Z., Hu, X.M., Kemp, D.B., Li, J., 2018. Carbonate-platform response to the Toarcian Oceanic Anoxic Event in the southern hemisphere: Implications for climatic change and biotic platform demise. *Earth and Planetary Science Letters* 489, 59-71.

Izumi, K., Kemp, D.B., Itamiya, S., Inui, M., 2018a. Sedimentary evidence for enhanced hydrological cycling in response to rapid carbon release during the early Toarcian oceanic anoxic event. *Earth and Planetary Science Letters* 481, 162-170.

- Izumi, K., Endo, K., Kemp, D.B., Inui, M., 2018b. Oceanic redox conditions through the late Pliensbachian to early Toarcian on the northwestern Panthalassa margin: Insights from pyrite and geochemical data. *Palaeogeography Palaeoclimatology, Palaeoecology* 493, 1-10.
- Jozsa, S., Suan, G., Schlogl, J., 2018. Benthic foraminiferal bioevents in lower to upper Toarcian strata of Southern Beaujolais (SE France). *Geobios* 51, 137-150.
- Kemp, D.B., Fraser, W.T., Izumi, K., 2018. Stratigraphic completeness and resolution in an ancient mudrock succession. *Sedimentology* 65, 1875-1890.
- Konwert, M., Hoernig, M., 2018. *Grimmenichthys ansorgei*, gen., et sp. nov. (Teleostei, Pholidophoriformes), and other Pholidophoriform fishes from the Early Toarcian of Grimmen (Mecklenburg-Western Pomerania, Germany). *Journal of Vertebrate Paleontology* 38, 3, e1451871.
- Posenato, R., Bassi, D., Trecalli, A., Parente, M., 2018. Taphonomy and evolution of Lower Jurassic lithiotid bivalve accumulations in the Apennine Carbonate Platform (southern Italy). *Palaeogeography Palaeoclimatology, Palaeoecology* 489, 261-271.
- Reolid, M., Molina, J.M., Nieto, L.M., Rodríguez-Tovar, F.J., 2018a. The Toarcian Oceanic Anoxic Event in the South Iberian Palaeomargin. *SpringerBriefs in Earth Sciences* 122 pp.
- Reolid, M., Mattioli, E., Duarte, L.V., Marok, A., 2018b. Advances in the understanding of the Toarcian Oceanic Anoxic Event (IGCP-655 annual report). *Episodes* 41, 120-127.
- Rita, P., de Baets, K., Schlott, M., 2018. Rostrum size differences between Toarcian belemnite battlefields. *Fossil Record* 21, 171-182.
- Rosales, I., Barnolas, A., Goy, A., Sevillano, A., Armendariz, M., López-García, J.M., 2018. Isotope records (C-O-Sr) of late Pliensbachian-early Toarcian environmental perturbations in the westernmost Tethys (Majorca Island, Spain). *Palaeogeography Palaeoclimatology, Palaeoecology* 497, 168-185.
- Rübsam, W., Müller, T., Kovacs, J., Palfy, J., Schwark, L., 2018. Environmental response to the early Toarcian carbon cycle and climate perturbations in the northeastern part of the West Tethys shelf. *Gondwana Research* 59, 144-158.
- Suan, G., Schollhorn, I., Schlogl, J., Segit, T., Mattioli, E., Lecuyer, C., Fourel, F., 2018. Euxinic conditions and high sulfur burial near the European shelf margin (Pieniny Klippen Belt, Slovakia) during the Toarcian oceanic anoxic event. *Global and Planetary Change* 170, 246-259.
- Them, T.R., Gill, B.C., Caruthers, A.H., Gerhardt, A.M., Grocke, D.R., Lyons, T.W., Marroquín, S.M., Nielsen, S.G., Trabucho Alexandre, J.P., Owens, J.D., 2018. Thallium isotopes reveal protracted anoxia during the Toarcian (Early Jurassic) associated with volcanism, carbon burial, and mass extinction. *Proceedings of the National Academy of Sciences of the United States of America* 115, 6596-6601.
- Thibault, N., Ruhl, M., Ullmann, C.V., Korte, C., Kemp, D.B., Grocke, D.R., Hesselbo, S.P., 2018. The wider context of the Lower Jurassic Toarcian oceanic anoxic event in Yorkshire coastal outcrops, UK. *Proceedings of the Geologists Association* 129, 372-391.
- Xu, W., Ruhl, M., Jenkyns, H.C., Leng, M.J., Huggett, J.M., Minisini, D., Ullmann, C.V., Riding, J.B., Weijers, J.W.H., Storm, M.S., Percival, L.M.E., Tosca, N.J., Idiz, E.F., Tegelaar, E.W., Hesselbo, S.P., 2018a. Evolution of the Toarcian (Early Jurassic) carbon-cycle and global climatic controls on local sedimentary processes (Cardigan Bay Basin, UK). *Earth and Planetary Science Letters* 484, 396-411.
- Xu, W., Mac Niocaill, C., Ruhl, M., Jenkyns, H.C., Riding, J.B., 2018b. Magnetostratigraphy of the Toarcian Stage (Lower Jurassic) of the Llanbedr (MochrasFarm) Borehole, Wales: basis for a global



standard and implications for volcanic forcing of palaeoenvironmental change. *Journal of the Geological Society* 175, 594-604.

*Other Publications:*

Duarte, L.V., 2018. Da última Cimeira do CLima à história evolutiva da Terra. *Revista de Ciência Elementar* 6, art. 1.

García Joral, F., Villas, E., Baeza-Carratalá, J.F., 2018. Field Guide *E1* Palaeozoic and Mesozoic brachiopods of East Spain. 8th International Brachiopod Congress, Milan. 80 pp.

*Meetings:*

2nd International Workshop on the Toarcian Oceanic Anoxic Event (IW-TOAE) September 6-9th, Coimbra, Portugal. 47 researchers from 15 countries (Algeria, Brazil, Canada, China, France, Germany, Iran, Ireland, Italy, Morocco, Portugal, Spain, Sweden, Switzerland and United Kingdom).

See <https://youtu.be/VOPnFtRUYz4>



1st day field trip to the Toarcian GSSP, Penische section.

Upper Toarcian marly limestones with siliceous sponge bioherms in the Rabaçal area (2nd-day of the field trip).



Special session of the IGCP 655 in the 26eme Réunion des Sciences de la Terre (Société Géologique de France) 22-26 october: Session 15.2. "PICG – Global Change and the Evolution of Life: Evidence form the Geological Record".



Short training course on organic matter coordinated by Prof. João Graciano Mendonça Filho from Federal University of Rio de Janeiro (Brazil).

*Other IGCP-related activities:*

- 1) Educational seminar "Interpretações paleoambientais a partir do Jurássico da região de Tomar. O exemplo do evento anóxico oceânico do Toarciano (~182 Ma). 18th May 2018.
- 2) Short Training Course titled: Organic matter characterization in anoxic marine facies: palynofacies and organic geochemistry approaches. By Prof. João Graciano Mendonça Filho (Federal University of Tio de Janeiro, Brazil) in University of Coimbra 9th September 2018.
- 3) High-school lectures by Pro. L.V. Duarte (Rio Maior and Peniche localities), entitled "*Andanças de um geólogo pelo planeta Terra. Algumas lições de geologia*".

*Planned activities 2019:*

Special session in the 11th North American Paleontological Convention (June 23 – 27, Riverside, California.; USA.

- Special session in the Goldschmidt 2019, August 18 – 23th, Barcelona, Spain.
- 3rd IW-TOAE, September 2- 5, Erlangen, Germany.

### 3.2. IGCP Projects with Spanish Working Groups (SWGs).

#### ***IGCP 639 "Sea Level Change from Minutes to Millennia"***

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*Abstract:* The IGCP started in 2016; as this IGCP continues other projects linked to "Sea Level changes", the Spanish National Committee was informed on the intention of remain the Working Group with the new project. Most of the components of the previous IGCP 588 SWG confirmed their intention to participate in the Spanish Working Group of the new project.

#### *Meetings:*

European Geosciences Union General Assembly 2018, Viena, 18-23 april 2018

Co-sponsored sessions

Sea-level changes from minutes to millennia:

<http://meetingorganizer.copernicus.org/EGU2018/session/28789>

Coastal morphodynamics: nearshore, beach and dunes:

<http://meetingorganizer.copernicus.org/EGU2018/session/27448>

As Convener: Emilia Guisado-Pintado, de la Universidad de Sevilla

Geological records of extreme wave events:

<http://meetingorganizer.copernicus.org/EGU2018/session/26704>

#### *Publications:*

García-Artola, A., Stéphan, P., Cearreta, A., Kopp, R. E., Khan, N. S., and Horton, B. P. 2018. Holocene sea-level database from the Atlantic coast of Europe. *Quaternary Science Reviews*, doi: 10.1016/j.quascirev.2018.07.031.

#### *Planed activities 2019:*

Fourth annual meeting of IGCP 639, Xiamen, China, 13th to 20th October 2019.

European Geosciences Union General Assembly 2019, Viena, 7-12 April 2019. Co-sponsored sessions:

1) Coastal morphodynamics: nearshore, beach and dunes (sponsored by CCS - IGU) (co-organised)

2) Geological records of extreme wave events (co-organised)

20th INQUA Congress, Dublin, 25th and 31st July 2019

Two IGCP 639 co-sponsored sessions:

Sea-level changes from minutes to millenia

The sedimentary record of tsunamis and storm

X Jornadas de Geomorfología Litoral, Castelldefels, September 4-6, 2019. SWG will be active in the organisation and scientific committee.



### ***IGCP 640 “S4SLIDE Significance of modern and ancient Subaqueous Slope landSlides”***

*Abstract:* No official group has already been settle, but three active Spanish participants have agree in leading a SWG. They are David Casas Layola and Ricardo León Buendía from the Spanish Geological Survey in Madrid and Roger Urgeles from the CSIC, Institute of Marine Sciences Barcelona

The S4SLIDE project (IGCP-640) builds upon the extremely successful E-MARSHAL and IGCP-511 projects also known as the Submarine Mass Movements and Their Consequences project. S4SLIDE has a broader reach that seeks to incorporate learnings from lacustrine, coastal and subaerial landslides. As with its predecessors, the IGCP-640 project focuses on facilitating the interaction of scientists, engineers, industry and government representatives, and other parties interested in subaqueous mass movements and their geohazard potential.

Project Webpage: <https://sites.google.com/a/utexas.edu/s4slide/home>

*Meetings:*

#### **8th International Symposium on Subaqueous Mass Movements and Their Consequences**

The 8th International Symposium on Subaqueous Mass Movements and Their Consequences took place in Victoria, Canada on May 7 th -9 th , 2018. The conference was hosted by the Geological Survey of Canada and Ocean Networks Canada, the organizing committee was led by Gwyn Lintern (Geological Survey of Canada – Institute of Ocean Sciences), Dave Mosher (University of New Hampshire), Martin Scherwath (Ocean Networks Canada), Cooper Stacey (Geological Survey of Canada – Institute of Ocean Sciences) and Phil Hill (Geological Survey of Canada – Institute of Ocean Sciences).

The main objective of this bi-annual event is to share the latest technical accomplishments and advancements in the topic of subaqueous landslides, to discuss as a community the nature of the main technical challenges in the realm of subaqueous landslides affecting lakes, coastal areas and the deep-sea, to define/discuss future directions and actions to address those challenges, to stimulate engagement of students and early career researchers from a wide range of technical, geographical and cultural backgrounds and to foster an environment of international cooperation conducive to the initiation of new projects and activities.

Close to 90 technical contributions were presented during the meeting covering a broad spectrum of subthemes that included: (1) subaqueous mass movements in lakes, fjords and coastal areas, (2) tectonics and mass movements, (3) mass transport deposits in modern and outcrop sedimentology, (4) failure dynamics from landslide geomorphology, (5) tsunami generation from slope failures, (6) prediction, engineering design and mitigation to reduce damage by submarine



Participants 8th International Symposium on Subaqueous Mass Movements and Their Consequences – Victoria, Canada 2018 (Organized by the Geological Survey of Canada and Networks Canada).



mass movements, (7) geotechnical aspects of mass movements, (8) instrumentation and methods for monitoring submarine mass movements, (9) multidisciplinary case studies, (10) numerical and statistical analysis, (11) fluid flow and gas hydrates, (12) failure dynamics from landslide geomorphology, (13) submarine mass movement in margin construction and economic significance and (14) tsunami generation from slope failures. Thirty-nine of these technical contributions have been published as part of a Geological Society of London Special Publication (SP477).

Spanish members participate in this International Congress with contributions that will be followed by a Special Publication within the Geological Society of London (SP477).

In addition to the technical program, pre- and post- conference activities were part of the program including a pre-conference field trip on the “Marine Geology and Landslides of the Central Salish Sea” that was organized by Peter Bobrowsky, David Mosher, David Huntley (Natural Resources of Canada), and Nick Roberts (Simon Fraser University) (Bobrowsky et al., 2018). A post-conference virtual field trip was led by Cooper Stacey (NRCan) and Martin Scherwath (Ocean Networks Canada) that included tours to the Pacific Geoscience Centre and the Marine Technology Centre. A post-conference sea kayak trip was led by Doug Vandine to the Haro Strait with spectacular views of Quadra Sands at Island View Beach and James Island and a post-conference course “Introduction to Geohazards Assessment: An Industry Perspective” that was taught by Craig Shipp (Shell International) and David Mosher (Natural Resources of Canada) was also offered. All these activities were of interest to students and early career researchers who had direct access to these landmark Canadian research institutions and to their scientists and technicians who are working on a wide range of topics. S4SLIDE (IGCP-640) offered 15 grants to students and early career researchers to help them cover expenses associated with the conference.

#### *A Consistent Approach for the Morphometric Characterization of Subaqueous Landslides*

As reported in our last note in Episodes, S4SLIDE started 2017 with a workshop that took place in London and that was organized by Dr. Mike Clare from the National Oceanography Center of Southampton and Dr. Christopher Jackson from Imperial College of London. Dr. Ricardo Leon was the Spanish representative in the workshop. As the result of this community effort, an approach was developed to collect consistent measurements of subaqueous landslide morphometrics to be used in the design of a broader, global open-source, peer-curated database. Examples from different settings illustrate how the approach can be applied, as well as the difficulties encountered when analysing different landslides and data types. Standardizing data collection for subaqueous landslides should result in more accurate geohazard predictions and resource estimation (Clare et al., 2018). Details of this study were first published as part of an EarthArXiv preprint and then evolved into an open access contribution for the Geological Society of London special publication that is linked to the 8th International Symposium on Subaqueous Mass Movements and Their Consequences that took place in Victoria, Canada in 2018. Twenty-three authors from sixteen different institutions were part of this community effort that seeks to standardize the way we collect morphometric data. The next step involves building an open access database, a second workshop to discuss the practicalities of this endeavor is in the planning phase. This is intended to be a truly inclusive endeavor and all members of the community are invited to contribute and comment.



Photo group of the short-course: “Introduction to Geohazards Assesment: an industry perspective”.

Participants of the pre-conference field trip on the “Marine Geology and Landslides of the Central Salish Sea”.

*20th International Sedimentological Congress, Québec August 2018*

A S4SLIDE sponsored session was part of the 20 th International Sedimentological Congress during August 13 th – 17 th , 2018 in Québec, Canada. The session “Effect of Mass Movement on the Sedimentological Environment” was chaired by Dominique Turmel (Université Laval, Québec, Canada), Lorena Moscardelli (Equinor), Roger Urgeles (Institut de Ciencies del Mar, Barcelona, Spain) and Jacques Locat (Université Laval, Québec, Canada). Nine technical contributions were presented spanning a wide range of topics from 3D seismic evidence of diachronous shale mobilisation in the Brazilian Equatorial margin to submarine landslide characterisation and tsunamigenic potential within mixed carbonate-siliciclastic settings.



Participants of the 20th International Sedimentological Congress, Québec, August 2018.

*Publications:*

*Peer-review papers*

Clare, M., Chaytor, J., Dabson, O., Gamboa, D., Georgiopoulou, A., Eady, H., Hunt, J., Jackson, C., Katz, O., Krastel, S., Leon, R., Micallef, A., Moernaut, J., Moriconi, R., Moscardelli, L., Mueller, C., Normandeau, A., Patacci, M., Steventon, M., Urlaub, M., Volker, D., Wood, L., & Jobe, Z., 2018: A consistent global approach for the morphometric characterization of subaqueous landslides *Geological Society, London, Special Publications*, 477, 30 April 2018, <https://doi.org/10.1144/SP477.18>

Horozal, S., Bahk, J.J., Lee, S.H.; Cukur, D., Urgeles, R.; Kim, G.Y., Kim, S-P-, Ryu, B-J & Kim, J-H., 2018: Mass-wasting processes along the margins of the Ulleung Basin, East Sea: insights from multichannel seismic reflection and multibeam echosounder data. *Geological Society, London, Special Publications*, 477, 30 April 2018, <https://doi.org/10.1144/SP477.18>

Llopart, J., Urgeles, R., Forsberg, C.F., Camerlenghi, A., Vanneste, M., Rebesco, M., Lucchi, R.G., R  ther, D.C., Lantzsch, H. (2018): Fluid flow and pore pressure development throughout the evolution of a trough mouth fan, western Barents Sea, Basin Research, in press.

Le  n, R., Garc  a-Davalillo, J.C., Casas, D. & Gim  nez-Moreno, C. J., 2018: Submarine landslide catalogue onshore/offshore harmonization: Spain as a case study. *Geological Society, London, Special Publications*, 477, 31 July 2018, <https://doi.org/10.1144/SP477.38>

Madrussani, G., Rossi, G., Rebesco, M., Picotti, S., Urgeles, R., Llopart, J. (2018): Sediment properties in submarine mass-transport deposits using seismic and rock-physics off NW Barents Sea. *Marine Geology*, 402: 264-278.

Urgeles, R., Bahk, J.J., Lee, S.H., Horozal, S., Cukur, D., Kim, S.-P., Kim, G.-Y., Jeong, S.-W., Um, I.-K. 2018: Tsunami hazard from submarine landslides: scenario-based assessment in the Ulleung Basin, East Sea (Japan Sea). *Geosciences Journal (in press)* .

Somoza, L., Medialdea, T., Gonzalez, FJ. 2018: Giant mass-transport deposits in the southern Scotia Sea (Antarctica). in Lintern et al. ( eds. ) Subaqueous Mass Movements. *Geological Society, London, Special Publications*, 477, 6 March 2018, <https://doi.org/10.1144/SP477.2>

#### *Contributions from Spanish Participants:*

Clare, M., Chaytor, J., Dabson, O., Gamboa, D., Georgiopoulou, A., Eady, H., Hunt, J., Jackson, C., Katz, O., Krastel, S., Leon, R., Micallef, A., Moernaut, J., Moriconi, R., Moscardelli, L., Mueller, C., Normandeau, A., Patacci, M., Steventon, M., Urlaub, M., Volker, D., Wood, L., and Z. Jobe (2018) A consistent global approach for the morphometric characterization of subaqueous landslides 8th International Symposium on Submarine Mass Movements and Their Consequences, Victoria (BC), CANADA, May 7-9, 2018, ORAL

Gr  cia, E., Lo Iacono, C., Urgeles, R., Bartolom  , R., Mart  nez-Loriente, S., Perea, H., Serra, C.S., Mencaroni, D., Meservy, W., Vizcaino, A., Terrinha, P., Zitellini, N. (2018): Submarine slope failures associated to the Marqu  s de Pombal active fault reveal past earthquake events (SW Iberian Margin), 20th International Sedimentological Congress, Qu  bec, CANADA August 13-17, 2018, POSTER.

Le  n, R., Garc  a-Davalillo, J. C., Casas, D., & Gim  nez-Moreno, C. J. (2018): Submarine landslide catalogue onshore/offshore harmonization: Spain as a case study. 8th International Symposium on Submarine Mass Movements and Their Consequences, Victoria (BC), CANADA, May 7-9, 2018, ORAL

Llopart, J., Urgeles, R., Forsberg, C.F., Camerlenghi, A., Vanneste, M., Rebesco, M. (2018): Hydrogeological evolution of a Trough Mouth Fan in the western Barents Sea and implications for continental slope stability, 8th International Symposium on Submarine Mass Movements and Their Consequences, Victoria (BC), CANADA, May 7-9, 2018, ORAL.

Mencaroni, D., Urgeles, R., Gr  cia, E., Bartolom  , R. (2018): Pre-failure stress-state of an earthquake triggered submarine landslide: The Marques de Pombal landslide, offshore Portugal, 20th International Sedimentological Congress, Qu  bec, CANADA August 13-17, 2018, ORAL.

Urgeles, R., Meservy, W.N., Gràcia, E., Lo Iacono, C., Sànchez-Serra, C., Zengaffinen, T., Løvholt, F. (2018): Submarine Landslides of the Mediterranean Sea: How large, how often, 20th International Sedimentological Congress, Québec, CANADA August 13-17, 2018, ORAL. Horozal, S., Bahk, J.-J., Lee, S.H., Cukur, D., Urgeles, R., Kim, G.Y., Kim, S.-P., Ryu, B.-Y., Kim, J.-H. (2018): Mass wasting processes along the margins of the Ulleung Basin, East Sea: insights from multi-channel seismic reflection and multibeam echosounder data, 8th International Symposium on Submarine Mass Movements and Their Consequences, Victoria (BC), CANADA, May 7-9, 2018, ORAL.

Vázquez-Izquierdo, A., Payo, E., León, R. (2018): Geological dependence of morphometric landslide parameters. 8th International Symposium on Submarine Mass Movements and Their Consequences, Victoria (BC), CANADA, May 7-9, 2018, POSTER.

Somoza, L., Medialdea, T., Gonzalez, F.J. (2018): Giant mass-transport deposits in the southern Scotia Sea (Antarctica), 8th International Symposium on Submarine Mass Movements and Their Consequences, Victoria (BC), CANADA, May 7-9, 2018, ORAL

***IGCP 652 “Reading geologic time in Paleozoic sedimentary rocks”***

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*Abstract:* The group started already in 2017 with the beginning of the project; however, the Spanish-Portuguese Working Group became official in 2018 with the first meeting of the Group in the IV Congress on Iberian Paleontology and is composed of 26 members from Spain and Portugal belonging to nine universities, two Research institutions and to the Geological Survey of Spain, six are female and five young students. Besides the publications related below, five major events stand out during 2018: 1) Participation in the 5th International Paleontological Congress held in Paris with 12 contributions; 2) Participation in the 8th International Brachiopods Congress leading a fieldtrip to Paleozoic Rocks of the Iberian Chains (Spain); 3) Participation, with two talks in the International Meeting of the IGCP-652 held in Bremen (Germany). During the discussions, the Leader of the S-PWG presented the main aims and future plans of the group and explained in detail its composition (participants and their fields of contribution to the project); 4) Annual IGCP-652 Symposium in Vila Real (Portugal). On the occasion of the IV Iberian Paleontology



Congress, a special Symposium on IGCP-652 was organised. Main results are 13 scientific contributions, 1 keynote talk, the annual meeting of the Group, which represented the official creation of the group, according to the rules of the Spanish National Committee and finally the post-meeting fieldtrip to the UNESCO Arouca Geopark and the Valongo Anticline. 5) International Boot-camp for Master Students in the Montagne Noire (France) and the Spanish Pyrenees. This boot-camp brought together nine Spanish and Portuguese master students who were trained in bio-chronostratigraphy and field Geology during four full days. This capacity building activity was possible to the collaboration of Professors from the CNRS University of Montpellier (Raimund Feist and Catherine Girard) and the University of Valencia (José Ignacio Valenzuela Ríos and Jau-Chyn Liao).

#### *Publications:*

##### *Peer-review papers*

Lu J. F. , Valenzuela-Ríos, J. I., Chen, X. Q. & Liao, J.-C. (2018): Emsian (Lower Devonian) Conodonts from the Lufengshan section (Guangxi, South China). *Palaeobiodiversity and Palaeoenvironments* <https://doi.org/10.1007/s12549-018-0325-4>.

Lu J.F. , Valenzuela-Ríos, J. I., Liao, J.-C. & Kuang, G.-D. (2018): Conodont biostratigraphy of the Yujiang Formation (Emsian, Lower Devonian) at Shizhou, Guangxi, South China, *Palaeoworld* 27: 170-178. [/dx.doi.org/doi10.1016/j.palwor.2017.07.003](https://doi.org/10.1016/j.palwor.2017.07.003)

Suttner, T. J., Kido, E., Ariunchimeg, Ya. Sersmaa, G. Waters, J. A., Carmichael, S. K., Batchelor, C. J., Ariuntogos, M. Hušková, A. Slavik, L. Valenzuela-Ríos, J. I. , Liao, J.-C., Gatovsky, Y. A. (2018 in press)

##### *Book Chapters*

Blanco-Ferrera, S. & Sanz-López, J. (2018): The correlation boundary Tournaisian/Viséan (Mississippian) based on conodont occurrences in northern Spain. *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 537-545. IGME, Madrid*

Blanco-Ferrera, S. Sanz-López, J. & Miller, C. G. (2018): Evolución morfológica de géneros relacionados con *Gnathodus* (conodonto) durante el Misisípico. *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 547-553. IGME, Madrid*

Chirivella, J.B., Liñán, E., Dies Álvarez, M.E. & Gozalo, R. (2018): Los paradoxídeos de la Fm. Mansilla y base de la Fm. Murero (Leoniense Superior- Caesaraugustiense Medio, Serie 3 del Cámbrico) en las Cadenas Ibéricas (España). *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 555-561. IGME, Madrid*

Collantes, L., Gozalo, R., Garzón, I. & Mayoral, E. (2018): Trilobites del Cámbrico Inferior (Marianiense) de la Unidad Fregenal-Cumbres (Sierra Norte de Huelva). *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 563-570*

Fernández-Martínez, E., Coronado, I. Rodríguez, S. & Tourneur, F. (2018): Hallazgo de escleritos de Alcionáceos en materiales paleozoicos: desentramando el registro de Octocorallia. *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 571-578. IGME, Madrid*

González, I. , Rodríguez-Castro, I. & Rodríguez, S. (2018): Palinomorfos Misisípicos del Área del Guadiato. Datos preliminares. *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 579-581. IGME, Madrid*

Liao, J.-C., Valenzuela-Ríos, J.I., García-López, S. and Carls, P. (2018): The Kačák Episode (Middle Devonian) records in the Iberian Peninsula. *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 583-587. IGME, Madrid*

Rodríguez, S. & Coronado, I. (2018): Corales del Subpiso Asturiense en La Cordillera Cantábrica. *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 589-593. IGME, Madrid*

Santos, A.A., Pons, D., Valenzuela-Ríos, J.I., Cascales-Miñana, B., Sender, L.M. and Diez, J.B. (2018): Registro Paleobotánico em uma ilha Jurássica Vulcânica (E Península Ibérica). *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 377-378. IGME, Madrid.*

Sepúlveda Ballester, A. Liñan, E. & Gozalo, R. (2018): Los trilobites de Minas Tierga (Marianiense, Cámbrico Inferior) de las Cadenas Ibéricas (NE España). *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 595-601. IGME, Madrid*

Valenzuela-Ríos, J. I. & Liao, J.-C. (2018): The role of the Devonian conodonts from the Spanish Central Pyrenees in understanding the Devonian Standard Scale. *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 603-610. IGME, Madrid*

Villena, J. A., Martínez- Pérez, C. & Gozalo, R. (2018): Presencia de *Plumulites* sp. (Clase Machaerida) en el Frasnense (Devónico Superior) de Tabuena (Prov. Zaragoza; Cadenas Ibéricas). *In: Vaz, N. y Sá, A.A. (Eds.) Yacimientos paleontológicos excepcionales en la península Ibérica. Cuadernos del Museo Geominero, 27: 611-616. IGME, Madrid.*

#### *Abstracts International Congress*

Liao, J.-C. & García-López, S. (2018): Capturing The Kačák Episode (Middle Devonian) in the Palentine Domain (Cantabrian Mountains, NW Spain). *Abstract Book, 5th International Palaeontological Congress, 797*

Liao, J.-C., Silvério, G., Valenzuela-Ríos, J. I., Machado, G., Moreira, N., Barreto, P. (2018): Hunting for Eifelian (Middle Devonian) conodonts in the Pedreira Da Engenharia Formation (Ossa-Morena Zone, Portugal). *Abstract Book, 5th International Palaeontological Congress, 830.*

Liao, J.-C., Valenzuela-Ríos, J. I. (2018): The Givetian (Middle Devonian) in the Spanish Central Pyrenees: conodont high-resolution biostratigraphy as a basis for testing the ties of biological and environmental evolution to astronomical forces. *Opening Meeting IGCP 652, "Reading Time in Paleozoic sedimentary Rock": 15.*

Liao, J.-C., Valenzuela-Ríos, J. I., Girard, C. & Feist, R. (2018): Upper Givetian (Middle Devonian) Conodont sequences from the Spanish Central Pyrenees and the Montagne Noire (France) and their Biostratigraphic Correlation. *Abstract Book, 5th International Palaeontological Congress, 798.*

Liao, J.-C., Valenzuela-Ríos, J. I., Martínez-Pérez, C., Carls, P. (2018): Givetian (Middle Devonian) Conodonts from the Iberian Chains (Spain). Abstract Book, *5th International Palaeontological Congress*, 831.

Lu, J. F., Valenzuela-Ríos, J. I., Wang, C. Y., Liao, J.-C., Wang, Y. (2018): Emsian (Lower Devonian) conodonts from the Lufengshan section (Guangxi, South China). Abstract Book, *5th International Palaeontological Congress*, 800.

Valenzuela-Ríos, J. I., Carls, P., Martínez-Pérez, C., Liao, J.-C. (2018): Conodont sequences spanning (Lower Devonian) in the NE Spain (Pyrenees and Iberian Chains) and its relevance for the redefinition of the Base of the Emsian. Abstract Book, *5th International Palaeontological Congress*, 812.

Valenzuela-Ríos, J. I. & Liao, J.-C. (2018): The Lochkovian (Lower Devonian) in the Spanish Central Pyrenees: conodont high-resolution biostratigraphy as a basis for integrating Events, oceanic, climatic changes and Milankovitch cycles. Opening Meeting IGCP 652, "Reading Time in Paleozoic sedimentary Rock": 18.

Valenzuela-Ríos, J.I.; Murphy, M.A: & Carls, P. (2018): New insights on the *Pedavis* (Conodonta) apparatus. Abstract Book, *5th International Palaeontological Congress*, 813.

*Meetings:*

*5th International Paleontological Congress; 9th-13th of July, Paris (France).*



The Spanish Working Group contributed with 12 presentations in different IGCP-652 related sessions.

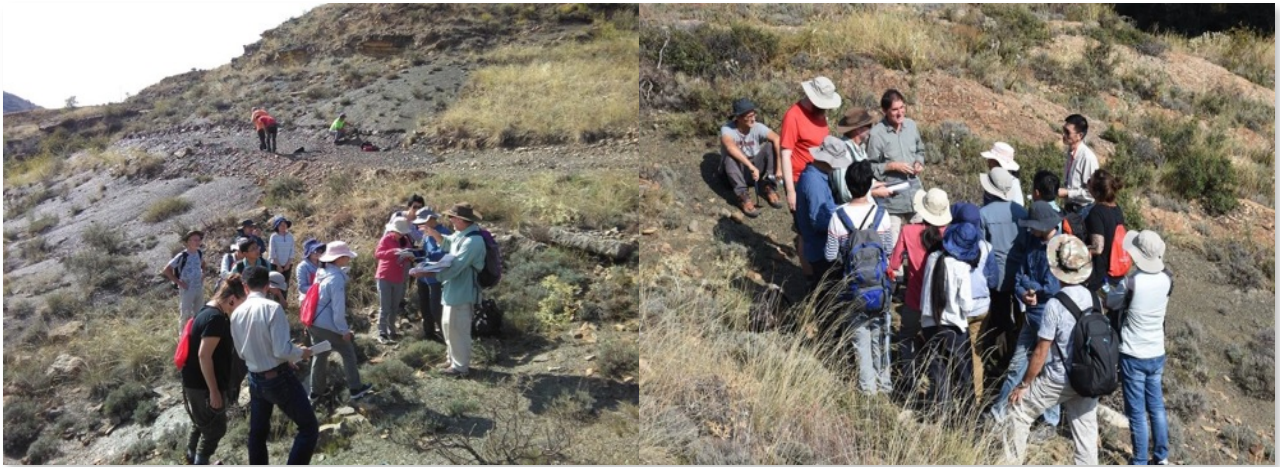


IGCP 652 Spanish members giving oral and poster presentations.



8th International Brachiopods Congress, 6-9 September in the Iberian Chains.

Guiding a pre-congress field trip and published an ample guide on Palaeozoic rocks.

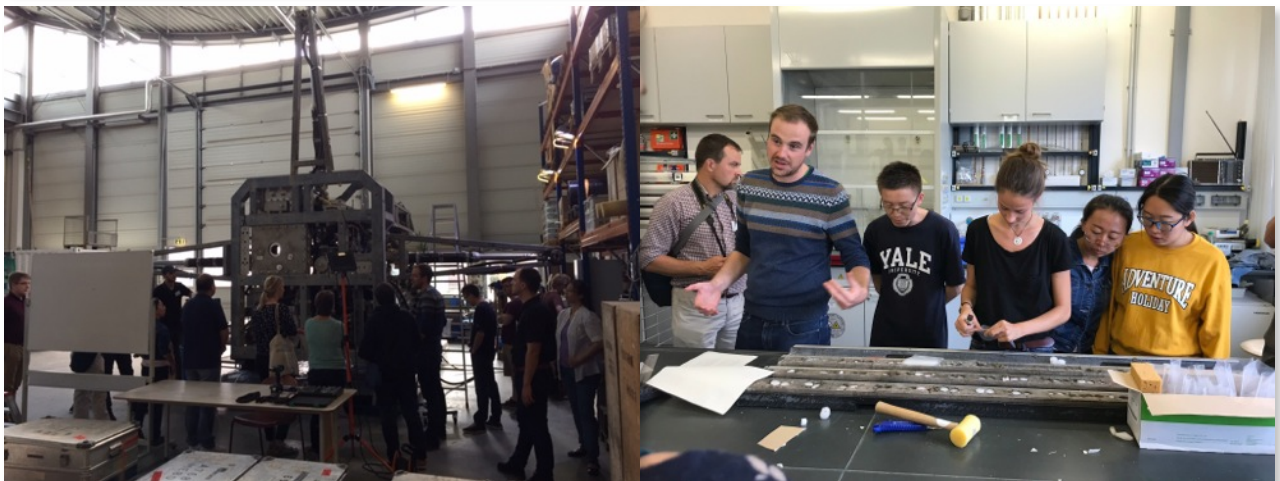


Three active IGCP 652 members guiding the Pre-conference field trip of the 8th International Brachiopods Congress in the Palaeozoic outcrops of the Iberian Chains.

First IGCP 652 Meeting in Marum Centre, Bremen (Germany); September 18-19.



Spanish presentation during plenary session.



David De Vleeschouwer co-leader of the IGCP 652 guiding the tour visit to the Marum Center's facilities (Bremen, Germany).



Two oral contributions and presentation of main goals, scope, planned activities and participants of the SWG.

Annual Meeting and Special Symposium of the IGCP-652 Spanish-Portuguese Working Group in the 4th Iberian Congress of Paleontology, September 26-30th, Vila Real (Portugal).

14 contributions and fieldtrip to the UNESCO Arouca Geopark and the Valongo Anticline.



Luis Collantes, student member, impressed for the exceptional palaeontological collection in the Geological Interpretation Centre of Canelas.



Photo group of the field tip to the UNESCO Arouca Geopark and the Valongo Anticline



Isabel Rodríguez-Castro, the new student member of the S-PWG, presenting her preliminary result during the past IGCP 652 scientific session in Vila Real (Portugal).



Gonçalo Silvério, a young fellow, introducing to the S-PWG members his research line related to the IGCP 652 .

Other IGCP-652 related activities:

Boot camp in the Montagne Noire and the Spanish Pyrenees, 13-17 November. Nine master students attended this field training organised by the cooperation of University of Valencia (Spain) and the CNRS, University of Montpellier (France).



Master Students of the University of Valencia attending the explanations of Prof. Feist (University of Montpellier) during the Boot-camp in the Montagne Noire (France).



Master Students guided by Prof. Valenzuela, examine a Lower Devonian outcrop of the lower Segre Valley (Spanish Pyrenees).

Master Students sampling in the Upper Devonian outcrop of the upper Segre Valley (Spanish Pyrenees).

*Planned activities for 2019:*

IGCP 652 International Meeting, “Applications of cyclostratigraphy in understanding Earth History”, STRATI 3; Milano; July 2019

Annual Meeting and Special Symposium of the IGCP-652 Spanish Working Group to be held in the 35th Spanish Paleontological Society, Baza, October 2019.

Boot-camp in Paleozoic Rocks (Pyrenees and Montagne Noire) to Master Students.

*Funding:*

The Spanish National Committee, the University of Valencia and the CNRS University of Montpellier partially supported the aforementioned activities.

*Members of the IGCP-652 Spanish Working Group.*

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Valenzuela Ríos	José Ignacio	Jose.I.Valenzuela@uv.es	University of Valencia
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### 3.3. IGCP Projects with Spanish Rapporteurs.

#### ***IGCP 653 “The Onset of the Great Ordovician Biodiversification Event”***

Spanish Rapporteur

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*Abstract:* Spain has participated in three major events and has published several papers (see attached list) during 2018. The three main meetings are: 1) International IGCP 653 meeting in USA; 2) Regional Meeting in Marrakech (Morocco) including fieldwork in the Lower Ordovician Fezouata Fossil-Lagerstätte, north of Zagora (Central Anti-Atlas) and 3) 8th International Brachiopods Congress; pre-conference fieldtrip in Spain.

#### *Publications:*

Esteve, J., Gutiérrez-Marco, J.C., Rubio, P. & Rábano, I. 2018. Evolution of trilobite enrolment during the Great Ordovician Biodiversification Event: insights from kinematic modelling. *Lethaia*, **51** (2), 207-217.

Gutiérrez-Marco, J.C. & Vinn, O. 2018. Cornulitids (tubeworms) from the Late Ordovician *Hirnantia* fauna of Morocco. *Journal of African Earth Sciences*, **137**, 61-68.

Lefebvre, B., Gutiérrez-Marco, J.C., Lehnert, O., Nowak, H., Akodad, M., El Hariri, K. & Servais, T. 2018. Age calibration of the Lower Ordovician Fezouata Lagerstätte (Morocco). *Lethaia*, **51** (2), 296-311.

Pereira, S., Gutiérrez-Marco, J.C., Colmenar, J. & Rábano. 2018. Trilobites del Ordovícico Superior del Macizo del Tremedal (rama castellana de la Cordillera Ibérica). *Geogaceta*, **64**, 95-98.

Rábano, I., Gutiérrez-Marco, J.C., Pereira, S. & Bernárdez, E. 2018. El trilobites *Dionide* (Trinucleoidea) en el Ordovícico de España. In: Vaz, N. & Sá, A.A. (Eds.), *Yacimientos paleontológicos excepcionales en la península Ibérica*. IGME, Madrid, *Cuadernos del Museo Geominero*, **27**, 313-323.

Topper, T.P., Zhang, Z., Gutiérrez-Marco, J.C. & Harper, D.A.T. 2018. The dawn of a dynasty: life strategies of Cambrian and Ordovician brachiopods. *Lethaia*, **51** (2), 254-266.

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#### *Invited Conferences in professional meetings:*

J.C. Gutiérrez-Marco - "Graptolites: the history of a major fossil group and its biostratigraphical application to the Fezouata Lagerstätte". Conferencia invitada en el IGCP 653 Workshop "The onset of the Great Ordovician Biodiversification Event". University Cadi Ayyad de Marrakech (Marruecos), February 12th 2018.

J.C. Gutiérrez-Marco - "El rico patrimonio paleontológico del Paleozoico Inferior de la Península Ibérica". Conferencia Inaugural del IV Congreso Ibérico de Paleontología y XXXIV Meeting of the Spanish Paleontological Society. Universidade de Tras-os-Montes e Alto Douro, Vila Real (Portugal), September, 28th 2018.

J.C. Gutiérrez-Marco - "Incidencia del comercio de fósiles en la economía del sur de Marruecos". Guest-speaker II International Symposium on Paleontology Peru. Lima (Perú), November 29th 2018.

#### *Outreach Conferences:*

J.C. Gutiérrez-Marco - "Son los fósiles un *recurso natural*? Patrimonio vs. sostenibilidad en el Anti-Atlas marroquí, epicentro del comercio mundial de fósiles". Facultad de Ciencias Geológicas, Universidad Complutense de Madrid, April 5th, 2018.

J.C. Gutiérrez-Marco - "El desarrollo de la vida marina durante los tiempos paleozoicos", Ciclo Historia de la Vida en la Tierra. Fundación Juan March. Madrid, May 8, 2018.

J.C. Gutiérrez-Marco - "Avances recientes en la Paleontología de Viso del Marqués". Conferencia invitada en homenaje al prof. Juan Castell Bustamente. Ayuntamiento de Viso del Marqués (Ciudad Real), July 26, 2018.

*Meetings:*

IGCP 653 Workshop “The onset of the Great Ordovician Biodiversification Event”. Marrakech (Marruecos), February 12-16.

64 Scientific Session of the Spanish Geological Society. Ávila, June 1-2.

8th International Brachiopod Congress. Milán (Italia), 11-14 de septiembre de 2018 [co-guide fieldtrip E1, September 6-9.

5<sup>th</sup> International Palaeontological Congress. Paris (Francia), July 9-13.

IV Paleontological Iberian Congress and XXXIV Jornadas de Paleontología. Vila Real (Portugal), September 26-29.

II International Symposium on Paleontology Peru. Lima (Perú), November 27-30.

62<sup>nd</sup> Annual Meeting of the Palaeontological Association. Bristol (United Kingdom), December 14-17.



Working Group visiting the Lower Ordovician Fezouata Fossil-Lagerstätte. north of Zagora (Central Anti-Atlas; Morocco)



8th International Brachiopods Congress. Fieldtrip to the Iberian Chains. Palaeozoic outcrop.

#### **4. National Committee activities.**

The President and the Secretary met with the new Director of the Spanish Geological Survey (IGME), who is also the chairperson of the National Commission on Geology, which holds the representation of the IUGS in Spain. In this meeting the general aims and scope of the IGCP and the role of the National Committee were outlined. The Director confirmed the support of the IGME to the IGCP and to the Spanish National Committee.

The Annual meeting of the Spanish National Committee was held in January in the IGME and the Presidents of the Geological, Palaeontological, Mineralogical and Quaternary studies Societies attended the meeting, as well as the President of the ICOG (Spanish National Geological Association) and the President of the Deans Conference. Also the Secretary of the Geoparks National Committee attended the meeting. The UNESCO representative was scheduled to attend the meeting, but due to a sudden illness, she was not able to join the meeting. In this meeting the President presented in detail the IGCP to the Presidents of National Societies and other representatives and insisted in the need of coordinate efforts among all Geologists and to keep inform the Geological Community of Spain on the possibilities of participating in different IGCP ongoing projects. The meeting was also the forum for presenting the National Committee Book on the occasion of the 40th Anniversary (already in 2015).

After the meeting, the President and the Secretary contacted with some IGME researchers who were involved in on-going IGCP but never contacted the Committee, and explain them the need to report to the Committee and try to organize a National Working Group.

The President took part in the Annual Spanish Conference of Deans of Geology held in the University of Salamanca. He outlined the IGCP and presented a document with details on all current IGCP projects that was handle to the Deans with the purpose of disseminate the information among all the Faculties of Geology in Spain. Special emphasis was devoted to explain the main five themes and the YES program. Again the intention of convene an IGCP-Conference on the role this Program plays for the advancement of the Geology and the benefits to society was laid out. Unfortunately, lack of economical resources impeded to accomplish this intention in 2018.

The President was engaged in the Annual Session of the IGCP in Paris (UNESCO Headquarters). Subsequently, he paid a visit to the Spanish Permanent UNESCO delegation and provided information on the actions of the Spanish National Committee stressing the need of support by the corresponding Spanish National Agencies. He also presented the Commemorative Book celebrating the 40th anniversary of the Spanish National Committee.

This year (2018) a call for members to join the IGCP Council was launched. The Spanish National Committee elaborated a document that was spread over the vast Spanish Geological community to encourage potential highly qualified and motivated scientists to present their applications. During the application time the President advised and coached potential candidates. At the end, six candidates expressed their wishes to apply for the open posts. As more than one candidate had the intention to apply for the themes Geohazards and Earth Resources, the Committee established a voting pool among these candidates. After all Committee members voted, the President wrote both letters of endorsement to Juan Ignacio Soto (University of Granada, Earth Resources) and Miguel Llorente Isidro (IGME, Geohazards). The Committee also endorsed the application of José Ignacio Valenzuela Ríos (University of Valencia) for the theme Global Change.

The President joined in the annual meeting of the Geoparks Spanish Committee held in Madrid.

The President assisted the Spanish leader of the IGCP 652 in the International Presentation of the SWG in the Opening Meeting held in Bremen (Germany) and in the founding meeting of this Group in Vila Real (Portugal) concurrently with the IV Iberian Paleontology Conference.

Several Members of the Spanish National Committee and its groups organised special IGCP Symposia and Scientific sessions within large International Meetings:

IGCP 637: Leader Dr. Dolores Pereira: I Workshop on Heritage Stones (2-4 of October, 2018; Salamanca, Spain)

IGCP 639: participant Dr. Emilia Guisado-Pintado, University of Sevilla “Geological records of extreme wave events” in the European Geosciences Union General Assembly 2018, Viena, 18-23 april 2018

IGCP 640: Dr Roger Urgeles chaired a session “Effect of Mass Movement on the Sedimentological Environment” within the 20th International Sedimentological Congress, Québec, Canada, August 2018

IGCP 652: Dr. José Ignacio Valenzuela Ríos guided the pre-congress fieldtrip of the 8th International Brachiopods Congress, 6-9 September in the Iberian Chains.

IGCP 652: Leader Dr. Jau-Chyn Liao organised a Special Symposium in the 4th Iberian Congress of Paleontology, September 26-30th, Vila Real (Portugal).

The President of the SNC gave advise and supporting letters to the following projects: 1) Pre-Atlantic geological connections among Northwest Africa, Iberia and North America: Implications for continental configurations and economic resources” presented by Pilar Montero and collaborators. 2) Building the path to circular economy and mining sustainability by mine tailing revalorization” presented by Annika Parviainen and collaborators. This is a YES proposal.

He also advised several researchers who approached the Committee to get information on the IGCP and on the possibilities of applying for projects.

Developing of an International Boot camp with Master Students in Spain (Pyrenees) and France (Montagne Noire). The President fully supported this initiative in connection with IGCP 652 and got involved in the organization and development of this activity, which involves four professors from France (CNRS-University of Montpellier) and Spain (University of Valencia) and nine master students from the Universities of Valencia, Huelva, Granada, Cartagena (Spain) and Lisbon (Portugal).

This year a total of six working groups or participants are active 637, 639, 640, 652, 653 and 655. Besides, a new rapporteur joined in the 668 new IGCP. Other Spanish researchers are, according to the different projects website, also involved in IGCP, but they resign to create a group (632) or they never contacted the Spanish National Committee (608, 609, 641, 648, 649).

IGCP Spanish National Committee Web Page: <http://www.igme.es/CNG/subcomisiones/PICG.htm>





Participants of the 8th International Brachiopods Congress in the classical Late Ordovician section “Piedra del Tormo”.



Participants of the 8th International Brachiopods Congress in the classical Early Devonian locality of “Fuente de Nogueiras”.



Professors and Master Students participating in the Boot Camp study the Compte section near the Noguera-Pallaresa river (Central Pyrenees).



## 5. IGCP Meetings held during the year 2018 in Spain.

I Workshop on Heritage Stones (2-4 of October, Salamanca)

8th International Brachiopods Congress, 6-9 September in the Iberian Chains. Pre-congress fieldtrip to Palaeozoic rocks.

64 Scientific Session of the Spanish Geological Society. Ávila, June 1-2.

## 6. IGCP meetings planned in Spain for the next year (2019).

Annual Meeting of the Spanish National Committee (Madrid, January).

IGCP Symposium in Baza (Granada, October)

Annual Meeting and Special Symposium of the Spanish Working Group IGCP-652 during the XXXV Meeting of the Spanish Paleontological Society to be held in October 2-5th, Baza.

Special session in the Goldschmidt 2019, August 18 – 23th, Barcelona. (IGCP 655)



X Jornadas de Geomorfología Litoral, Castelldefels, September 4-6th, (IGCP 639)  
63 Annual Meeting of the Palaeontological Association. Valencia, December, 18-20.

#### **7. Forthcoming events in connection with IGCPs.**

European Geosciences Union General Assembly 2019, Viena, 7-12 April.

Special session in the 11th North American Paleontological Convention (June 23 – 27, Riverside, California.; USA).

3rd IW-TOAE, September 2- 5, Erlangen (Germany).

20th INQUA Congress, Dublin, 25th and 31st July 2019

Fourth annual meeting of IGCP 639, Xiamen, China, 13th to 20th October.

IGCP 652 International Meeting, “Applications of cyclostratigraphy in understanding Earth History”, STRATI 3; Milano; July 2019

Boot camp in Paleozoic Rocks (Pyrenees and Montagne Noire) to Master Students.

#### **8. Suggestions relating to conduct and improvement of the Program.**

Enormous effort and progress has been made in improving communication and cooperation between the Board and the National Committees, and the Spanish National Committee acknowledges this commitment. However, still some aspects can be improved to enhance the performance of the program. Some of them are mere technical aspects, others are deeper and need to be evaluated from a more philosophical (program’s spirit) point of view.

By surveying the web page of the Program, the President of the Spanish National Committee became aware of that some projects could be of interest to potential Spanish participants, and in some projects Spanish scientists were involved. After contacting some of them, the President realised that they didn’t know the existence of a National Committee, neither the need (and possibility) of forming a National Working Group.

A suggestion to improve this situation has already been proposed and it is easy to apply and survey. By approving a new project, the Board should inform the leaders the need to contact and inform the respective National Committees of the countries involved in the project. At the same time, the leaders should inform potential participants to contact their respective National Committees. At the end of the year, these actions shall form part of the evaluation list and the (economic) renewal support be affected in case these simple actions have not been followed.

After contacting with some previous participants in IGCP projects, even former leaders, we realised that many workers don’t see the need of creating a National Working Group that form part of the National Committee, and they think there is no need to create such working groups. Obviously, National Working Groups are an important part of the National Committees and therefore, I suggest that International Board and National Committees shall work together in promoting the constitution of such groups.

An additional problem is the lack of control (which is impossible, of course) on the information provided by the different IGCP-projects web pages. Recently, I learn about a long list of Spanish participants in an IGCP project. The National Committee never was informed of such huge amount of participants, nobody contacted the National Committee to inform or report on this project, and the last by no least surprising fact is that people who is listed as participant never was contacted neither informed of his/her wish (first) or enrolment in such project. We have to find ways of

dealing with effective communication and transference of ideas and proposals between National Committees, Project Leaders and International Board.

Some webs don't work and others don't provide information on participants; so it is impossible to recruit information about participants in order to know whether there are some Spanish scientist enrolled in any project.

A more spiritual reflexion would be related to the question what kind of program participation are we looking for? Basically, do we want quantity and we are satisfy with plain numbers? or shall we strive for quality even if this implies a strong reduction in statistics?

Related to these questions, I have detected a problem in Spain that I don't know if it restricts to our country or it also happens elsewhere. Many participants they want to be listed because they want to increase their CVs with participation in an International Project. However, later on, they never participate, or even they don't mention the IGCP in their Project-related papers. Many of them, they complain there is not money to support any expenses, therefore they do not want to thank IGCP in their papers. Obviously, this is a great conceptual error, because IGCP has a different goals. It is clear that are many ways to participate, the more clear ones (writing papers, contributions to professional conferences...) but other ways as advising students, organising workshops, facilitate cooperation...are also possible. However, this is not evident for many of the "listed" but "inactive" participants.

In brief, I would like a compromise to participate in the program, so that everyone who agrees to be listed, also concur to be active in any of the many possible ways. I rather have small but strongly committed groups than large and discouraged ones.

Of course, this new situation implies an effective communication program by the Board and National Committees in explaining the Program and in motivating people. Even, project leaders, helped by Regional and "topic" coordinators shall evaluate the performance of participants and do not list them nor certify any participation with at least some contribution to the visibility of the program. I realise this is a hot topic, but I deeply believe that we shall confront this problem in the near future, and I offer my time and energy to make progress in this matter.

I want also comment on the role of the National UNESCO Delegations and the apparent lack of real interest in the Program. I'm not convince they understand the relevance of IGCP and its direct connection with the aims and goals of UNESCO, or at best, we have not been able to explain these officials our contribution to improve the world and serve the society (as our *motto* states). I think, this is another aspect National Committees and International Board shall address soon and, as before, I, personally, offer my time and energy to make progress in this matter.

I have the impression that some UNESCO Delegations and National Agencies for Cooperation with UNESCO see IGCP-National Committees only as "one mark more in the check list of Committees for the annual reports", but they don't care much about the particularities of this Program and, consequently, they don't see the need of effectively supporting the program neither the demand of exploring new ways of opening a special funding program to which National Committees can apply and submit proposals. This is another issue that National Committees and International Board can work together for improving the visibility of the program and augmenting financial sources.

As a last suggestion, I believe that having a special session with enough time for National Committees to exchange ideas,

experiences, intentions and difficulties will help to strength relations between committees and foster further inter-committees cooperation.

#### **9. Financial support received for the activities of this National Committee and given to IGCP projects and their activities.**

The Geological Survey of Spain partly supported the activities of the Spanish National Committee.

The supported activities were:

Participation of the President and the Committee Members in the Committee Annual Meeting

Participation of the President of the Spanish National Committee in the annual meeting of the IGCP Scientific Board, Paris, February 21st, 2018.

Participation of the President in the Annual Meeting of the National Geoparks Committee

Partly support of the IGCP-652 Spanish Leader for her participation in the International Opening Meeting held in Bremen (Germany)

Partly support of the Special IGCP-652 Symposium in the IV Iberian Paleontology Conference (Vila Real, Portugal)

The University of Valencia (Dpto. de Botánica y Geología) provided support for attending the Spanish Geology Dean's Conference and general services that allowed to the President of the Committee to carry out their duties appropriately.

Other financial sources that supported activities related with IGCP came from the Alexander von Humboldt-Stiftung, which partly supported the participation of the President in the IGCP-652 Opening meeting (Bremen).

Valencia, February 14th, 2019



José Ignacio Valenzuela Ríos  
President, Spanish National Committee, IGCP