

**INTERNATIONAL UNION OF GEOLOGICAL SCIENCES (IUGS)**  
**COMMISSION OF TECTONICS & STRUCTURAL GEOLOGY (TECTASK)**

**Annual Report 2018**

The Commission on Tectonics and Structural Geology (TecTask) represents an initiative of Earth Scientists dedicated to stimulate communication and coordination within the international science community and to provide information to the public. The group encourages innovative research and continued education in Tectonics and Structural Geology, the growth of intellectual capital and hence the impact of our science on the wealth of the global society. TecTask reaches out to scientists and students, particularly those from developing countries, to share cutting-edge research and development, and state-of-the-art training. Dialogue and cooperation is welcomed with organisations, industry and administrations regarding applications in Structural Geology and Tectonics for sustainable use of the world's natural resources, the preservation of the environment and the prevention of natural hazards.

The structure of the Tectask during 2018 is the following:

**Executive Committee:**

Prof. Rodolfo Carosi - Torino, Italy, Chair  
Prof. Manish Mamtani - Kharagpur, India, Vice-Chair  
Dr. Hermann Lebit – Houston, USA, Secretary General  
Dr. Erique Gomez-Rivas – Aberdeen, Scotland, Treasurer  
Prof. Alison Ord, Perth, Australia, outgoing Chair (2016)  
Prof. Manuel Sintubin, Leuven, Belgium, outgoing Vice-Chair (2016)

**Officers:**

Prof. Bruce Hobbs - Perth, Australia  
Prof. Martin Lompo - Burkina Faso  
Prof. Hemin Koyi - Uppsala, Sweden  
Dr. Taija Torvela, Leeds, UK  
Dr. David Peacock, Bergen, Norway

**Junior Officers:**

Dr. Anna Chanou - Western Ontario, Canada  
Dr. Manuel De Paz, Amsterdam, The Netherlands  
Dr. Lorenzo Gemignani, Amsterdam, The Netherlands (new junior officer)  
Dr. Salvatore Iaccarino, University of Torino, Italy (new junior officer)

**Financial statement, including explanation on the use of IUGS funding, identification of external sources of funding.**

Expenditures 2018:

- € 500 Outcropedia Webportal maintenance;
- € 1,071.95 Funding for Young Scientist Bursary at YORSGET meeting in Montgenevre 2018 (France)
- € 1,929.78 Funding for Young Scientist Bursary at Himalaya Karakoram Tibet meeting in Lausanne 2018 (Switzerland)
- € 4,000.00 Overhauling of the Outcropedia portal
- € 630.39 Participation of the TT Chair to the EC meeting in Potsdam, January 2018
- € 40 Software Call Recorder to record talks using Skype connection for Monthly Seminars
- 65.34 Bank account fees

**Total expenditures 2018 = - € 8,237.46**

- + € 4,180.00 from IUGS
- + € 4,057.46 External funding was obtained in 2018 due to past organization of workshops and field courses.

**Total revenue = + € 8,237.46**

**General work plan**

Based on the comments received from the IUGS ad-hoc review Committee during 2017 and wide discussion inside the EC involving later all the TecTask officers, we focused on the following topics until the 2020 IGC in Delhi.

- 1. TecTask Web Portal as our arena for communication and exposure to the public and science community**
- 2. Terms & Standards initiative with a wiki-like Internet Platform**
- 3. Organizing a YORSGET conference for knowledge sharing, exchange and training opportunity for young scientists**

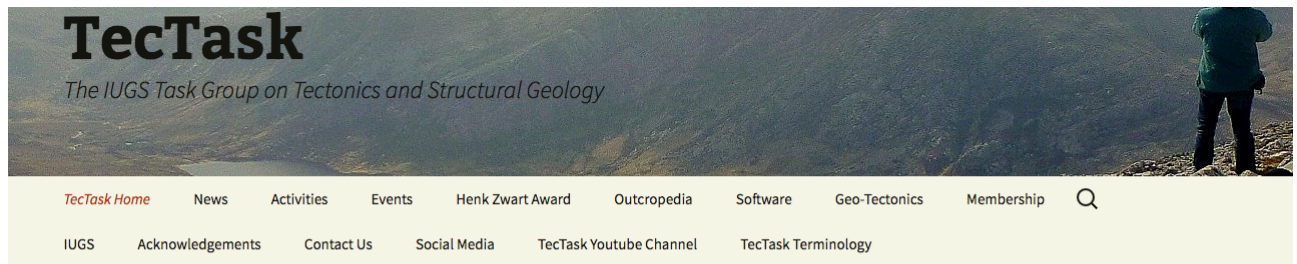
- 4. Monthly world Web Cast seminars on Structural Geology and Tectonics uploaded to the TecTask YouTube channel**
- 5. Overhaul of the Outcropedia portal including field trips**
- 6. TecTask as a major contributor and player at the 2020 IGC in Delhi**

## **1. TecTask Web Portal - Communication and visibility of the TecTask commission**

### **Web Portal**

The officer Dr. Taja Torvela, helped by the former officer Mark Jessell, is the new web manager starting in 2017. The new TecTask website has been created using WordPress: <http://www.tectask.org/>.

Two new pages have been added in 2018: 1) TecTask Terminology, 2) TecTask Youtube Channel



The Task Group on Tectonics and Structural Geology (TecTask) is a commission of IUGS. TecTask represents an initiative of Earth Scientists dedicated to stimulate communication and coordination within the international science community and to provide information to the public. The group encourages innovative research and continued education in structural geology and tectonics, the growth of intellectual capital and hence the impact of our science on the wealth of the global society. TecTask reaches out to scientists and students, particularly those from developing countries, to share cutting edge research and development, and state-of-the-art training. Dialogue and cooperation is encouraged with non-academic organisations, industries and governmental bodies regarding applications of structural geology and tectonics to sustainable use of the world's natural resources, the preservation of the environment, and prevention of natural hazards.



#### Why Register at this site?

Please support TecTask by registering. Registered members of the Tectask site gain access to the list of free downloadable software links as well as access to forms to contact the committee and the web manager. Visit the Membership page for registration form.

#### Tectask Facebook Feed



**Tectask** updated their cover photo.  
5 days ago

[View on Facebook](#) · [Share](#)

- The TecTask webpage, along with the Outcropedia webpage, continue to be active also on the Social Network Facebook: <https://www.facebook.com/Tectask/>, developed and maintained by R. Carosi by last April, 2017; <https://www.facebook.com/Tectask/>

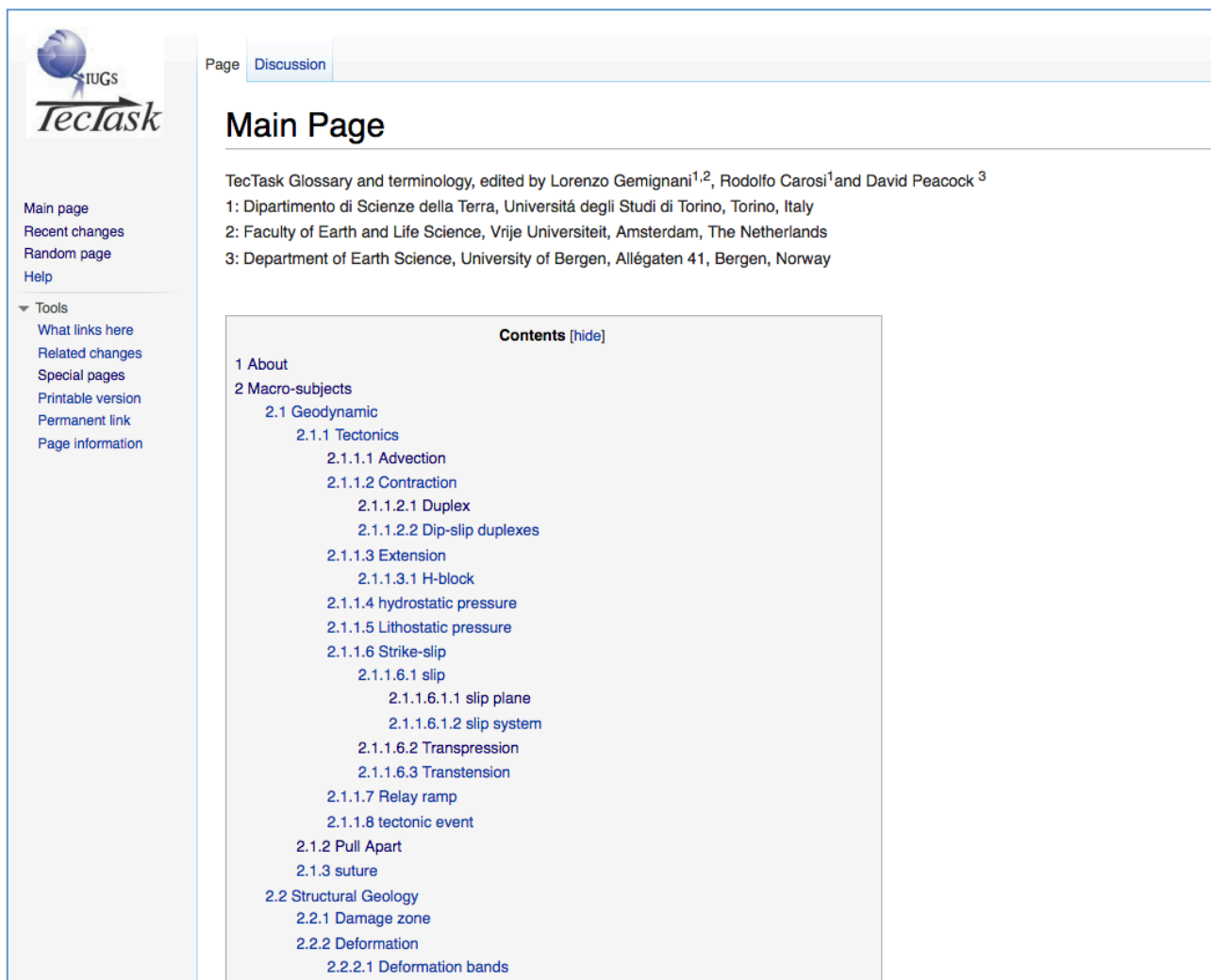
## 2. Terms & Standards initiative with a wiki-like Internet Platform

This is a major initiative that remained dormant over the past years, although it was constantly recognized as a fundamental objective of this commission. The need of scientific standards and measures as well as a homogeneous professional terminology are key essentials in every natural science discipline and was highlighted by the IUGS review committee and in several international publications.

Thanks to the help of the former officer Mark Jessell we have re-started this activity by building the long anticipated wikipedia-like internet platform (by MediaWiki):  
[http://www.tectonique.net/ttt/index.php?title=Main\\_Page](http://www.tectonique.net/ttt/index.php?title=Main_Page).

The basic concept is to develop a platform populated with terms and their definition, which can be publically discussed by the enrolled members before those are elevated into formal glossaries or a dictionary. Similar examples are found in international publications and text books such as Microtectonics by Passschier & Trouw (2005), Salt Tectonics by Jackson and Hudek (2016) or in the online course Microtectonics by Jessell & Bons (2008). Some of these authors have given permission to copy their glossaries to populate the platform. With the gradual increase of entries it is anticipated that the Structural Geology & Tectonics community will recognize and share the forum and actively participate in the formulation of the terms and definitions.

The new officer David Peacock, the junior officer Lorenzo Gemignani and Rodolfo Carosi developed the contents of this page. Some hundreds of terms have been already added, checked and described with references to international papers and books. In the next few weeks the platform will be communicated to the Structural Geology and Tectonics community to further develop and discuss SG and T terminology. Additionally, there will be a meeting of the main contributors to the Terminology & Standards wiki in June 2019, during the conference DRT-2019 in Tübingen, Germany (see below).



The screenshot shows the Wikipedia page for TecTask. The sidebar on the left contains links for 'Main page', 'Recent changes', 'Random page', 'Help', and a 'Tools' section with links like 'What links here', 'Related changes', 'Special pages', 'Printable version', 'Permanent link', and 'Page information'. The main content area has a 'Page' tab and a 'Discussion' tab. The title is 'Main Page'. Below the title, it says 'TecTask Glossary and terminology, edited by Lorenzo Gemignani<sup>1,2</sup>, Rodolfo Carosi<sup>1</sup> and David Peacock<sup>3</sup>'. Below this are three numbered addresses: 1: Dipartimento di Scienze della Terra, Università degli Studi di Torino, Torino, Italy; 2: Faculty of Earth and Life Science, Vrije Universiteit, Amsterdam, The Netherlands; 3: Department of Earth Science, University of Bergen, Allégaten 41, Bergen, Norway. The 'Contents [hide]' section lists the following items: 1 About; 2 Macro-subjects; 2.1 Geodynamic; 2.1.1 Tectonics; 2.1.1.1 Advection; 2.1.1.2 Contraction; 2.1.1.2.1 Duplex; 2.1.1.2.2 Dip-slip duplexes; 2.1.1.3 Extension; 2.1.1.3.1 H-block; 2.1.1.4 hydrostatic pressure; 2.1.1.5 Lithostatic pressure; 2.1.1.6 Strike-slip; 2.1.1.6.1 slip; 2.1.1.6.1.1 slip plane; 2.1.1.6.1.2 slip system; 2.1.1.6.2 Transpression; 2.1.1.6.3 Transtension; 2.1.1.7 Relay ramp; 2.1.1.8 tectonic event; 2.1.2 Pull Apart; 2.1.3 suture; 2.2 Structural Geology; 2.2.1 Damage zone; 2.2.2 Deformation; 2.2.2.1 Deformation bands.

*Screen shots of a part of the TecTask main page on Wikipedia for Terminology and Standards*

### **3. Organizing a YORSGET conference series as a knowledge sharing, exchange and training opportunity for young scientists**

#### **Second Conference of Young Researchers in Structural Geology and Tectonics (Yorsget 2018) 2-6 July 2018, Montgenevre, France - A TecTask conference**

The organizing committee is: University of Leeds (Dr Taija Torvela); University of Aberdeen (Prof Rob Butler; Dr Enrique Gomez-Rivas); University of Grenoble (Dr Thierry Dumont); Geoparc des Alpes Cottiennes (Raymond Cirio)

Yorsget is a conference concept aimed primarily at MSc/PhD students, post-docs, and early career researchers in the broad field of structural geology and tectonics. The conference provides a platform for networking and research presentations in a supportive and inspiring atmosphere. The first Yorsget was organised at the University of Oviedo, Spain, in 2008. The conference in 2018, therefore, marks the 10-year anniversary of the first conference. The location of Yorsget 2018 in Montgenevre, France, was selected due to its proximity to some

world-famous examples of structural geology and tectonics in the Alps, from outcrop to regional scale. The conference took the format of alternating days of oral and poster presentations (Monday, Wednesday, and Friday) with field trips (Tuesday and Thursday).

The 2<sup>nd</sup> Yorsget conference consisted of three keynotes, regular talks, poster presentations, and field trips. The conference website is <https://conferences.leeds.ac.uk/yorsget/> ; there is also a Facebook page <https://www.facebook.com/yorsget2018/> and a Twitter feed @yorsget.

In total, there were 57 delegates and four undergraduate student helpers at the conference. The participants came from all over the world: we welcomed attendance from e.g. Argentina, USA, Australia, Japan, Canada, and India, in addition to many European countries. TecTask, which was the umbrella organization for the conference, provided bursaries worth €2,000 in total. These were allocated to through an application process published at the conference website, to Ezequiel Olaizola and Elías Leonardo Iván (both from Argentina). In addition to the TecTask bursaries, the Tectonic Studies Group of the Geological Society of London also provided £1,000 for student bursaries.

The conference started with an ice-breaker on Sunday evening 1 July 2018. Over the three presentation days, the participants gave 32 talks in total, including three keynotes by Dr Rebecca Bell, Dr Geoffroy Mohn, and Dr David Wallis. A total of 30 posters were presented in addition. The two field trips took the participants to La Grave and Galibier (Tuesday 3 July) and to the Chenaillet (Thursday 5 July).



*Conference participants engaging with the geology at La Grave (left) and on the Chenaillet (right).*

The Tuesday trip looked first at a major Alpine thrust at La Grave that carries basement onto sediments, with panoramic views across the inverted Jurassic basins of the NW Alps. This was followed by an examination of the deformation associated with the Frontal Pennine Thrust and the emplacement of evaporite bodies that cross-cut Alpine structures at Col du Galibier. The day finished with a visit at the Geopark at the Maison de Geologie near Briancon, where we considered outreach activities promoting geosciences in schools and to the public. On Thursday, the participants walked up the Chenaillet directly from Montgenevre, to look at the

rocks carried up from the transition between the continental margin of Europe and the floor of the Tethyan ocean. The transect involves highly strained deep-water limestones and cherts, with exceptional shear criteria before moving onto obducted serpentinites/peridotites, gabbros and basalts that preserve ocean floor deformation structures.

The conference finished with a conference dinner on Friday 6 July.



*Yorsget2018: group photo*

The next YORSGET conference will be held in Catania (Italy) in September 2020. The TecTask commission will ensure that there is an edition of this conference every two years, and will support the organization of this conference series that is essential for young researchers in structural geology and tectonics.

### **Congresses and workshops relevant for Tectonics & Structural Geology**

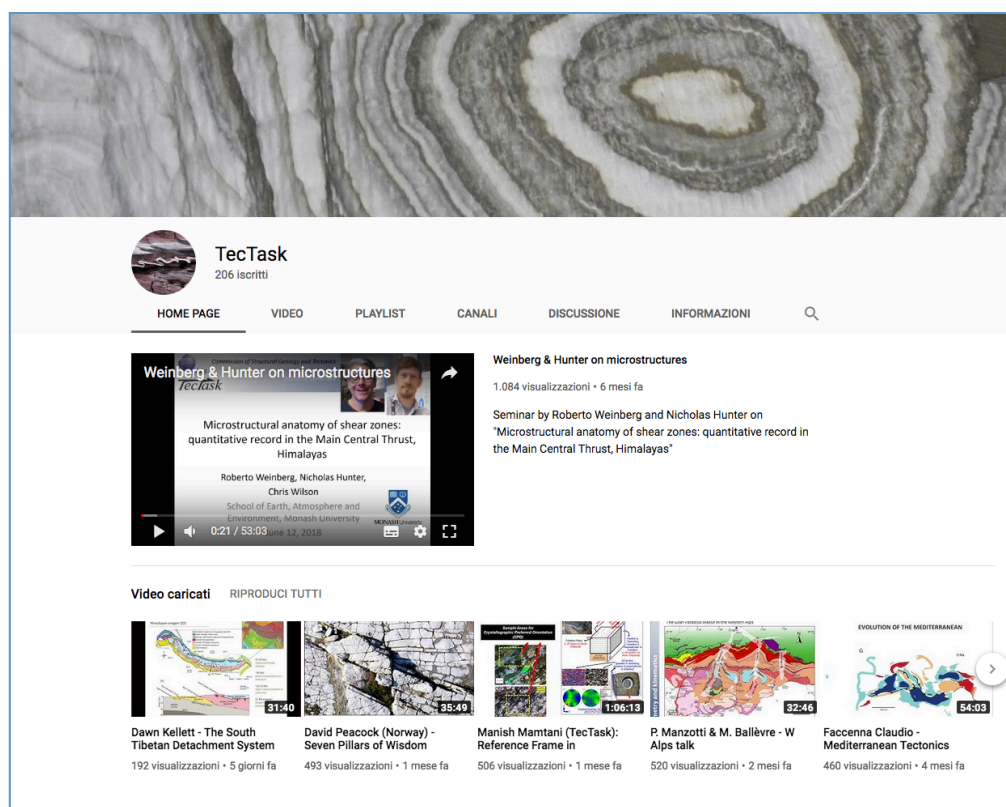
The forthcoming Deformation Mechanisms, Rheology and Tectonics (DRT-2019) congress, a very important international meeting in Structural Geology & Tectonics, will be organized by the TecTask officer Dr. Enrique Gomez-Rivas and the former TecTask officer Prof. P. Bons in Tübingen, Germany, in June 2019. This new edition will celebrate the career of the TecTask founder Prof. Cees Passchier, together with the career of Prof. Janos Urai.

DRT is organized every two years, and is also supported by the TecTask commission. The 2017 DRT edition meeting took place in Inverness, was sponsored by TecTask and was successfully organized by officer Dr. Enrique Gomez-Rivas with other colleagues from the University of Aberdeen. A total of 116 researchers from all around the world participated. A similar level of participation is expected for DRT-2019.









#### **4. Monthly Web Cast seminars on Structural Geology and Tectonics uploaded on the You Tube channel of TecTask**

We created the TecTask You Tube channel where we upload monthly invited seminars (<https://www.youtube.com/channel/UCXFYiccBYXw85bneuMm4Xgg>).

We started and we launched this new initiative in June 2018 recording and uploading a seminar once a month. We try to cover topics of Structural Geology and Tectonics, including regional studies of wide interest. We have 206 people inscribed in the channel up to now (mid January 2019) and nearly 4,300 views of the seminars in seven months. We received several signals of appreciation by colleagues both for research and for teaching. One limitation is that colleagues from China are not allowed to view videos on You Tube channels so that we'll try to upload video also in a system that can be used also in this country. The main aim of this channel is to provide the first worldwide seminar in Structural Geology and Tectonics, and allow researchers in different countries (especially in developing ones) to attend and participate in global seminars.



*Screen shot of the main page of the TT You Tube channel.*

Esplora tutti i contenuti			
<div> <div>Video</div> <div>Playlist</div> <div>Gruppi</div> </div>			
Cerca video			Q
Video	Visualizzazioni complessive ↓		Data di caricamento
	Weinberg & Hunter on microstructures	1.084	12/giu/2018
	Giulio Di Toro - The Earthquake engine	770	17/mag/2018
	P. Manzotti & M. Ballèvre - W Alps talk	520	16/ott/2018
	Manish Mamtani (TecTask): Reference Frame in Tectonics-Video	506	18/nov/2018
	David Peacock (Norway) - Seven Pillars of Wisdom	493	07/dic/2018
	Faccenna Claudio - Mediterranean Tectonics	460	20/ago/2018
	Mark Jessell Regional scale 3D geological modelling	278	11/lug/2018
	Dawn Kellett - The South Tibetan Detachment System	192	04/gen/2019

## 5. Overhaul of the Outcropedia portal including field trips

This 'activity' is definitively our primary show piece and needs to be promoted and developed as much as possible. Outcropedia was seen as a potential tool to start collecting potentially interesting outcrops. We overhauled the website during 2018 and the new website has been launched two months ago. The site is now able to host many bigger and higher quality photos and allow to navigate quickly (<http://outcropedia.tectask.org/>)



[Get Involved](#) [The Map](#) [About us](#)



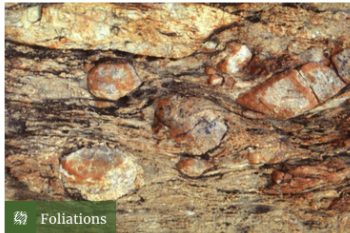
# Welcome to Outcropedia

The online public database of the best outcrops in the world.

## The Outcrops

Choose among the best Outcrops in the World

- Boudinage →
- Car →
- Faults →
- Folds →
- Foliations →
- Fractures, Joints, Veins →
- Lineations →
- Metamorphic rocks →
- Primary structures, sedimentary, magmatic rocks →
- Shear zones →



Foliations  
**Deformed conglomerate**



**Yarweelor Gneiss**

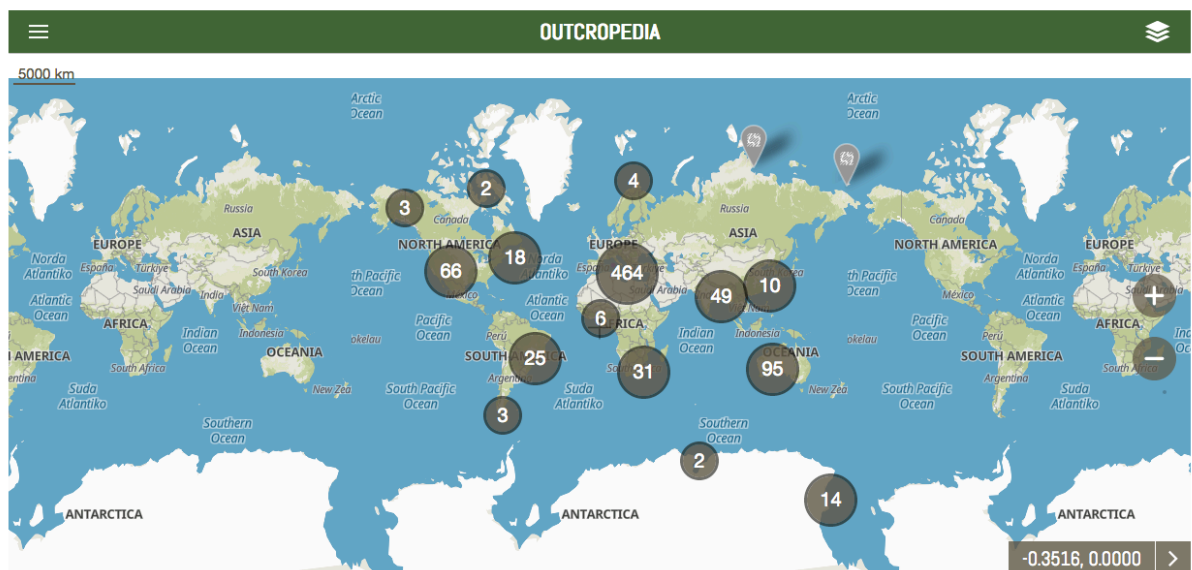
## GeoTours

Plan a GeoTour to explore the outcrops

- Car →



Car  
**Posada valley, Sardinia (Italy)**



**Contribute to the Outcropedia Project!**  
 Outcropedia depends on the submission of data by its users.  
 Please add your favorite, most beautiful outcrops to the collection!

Get involved!

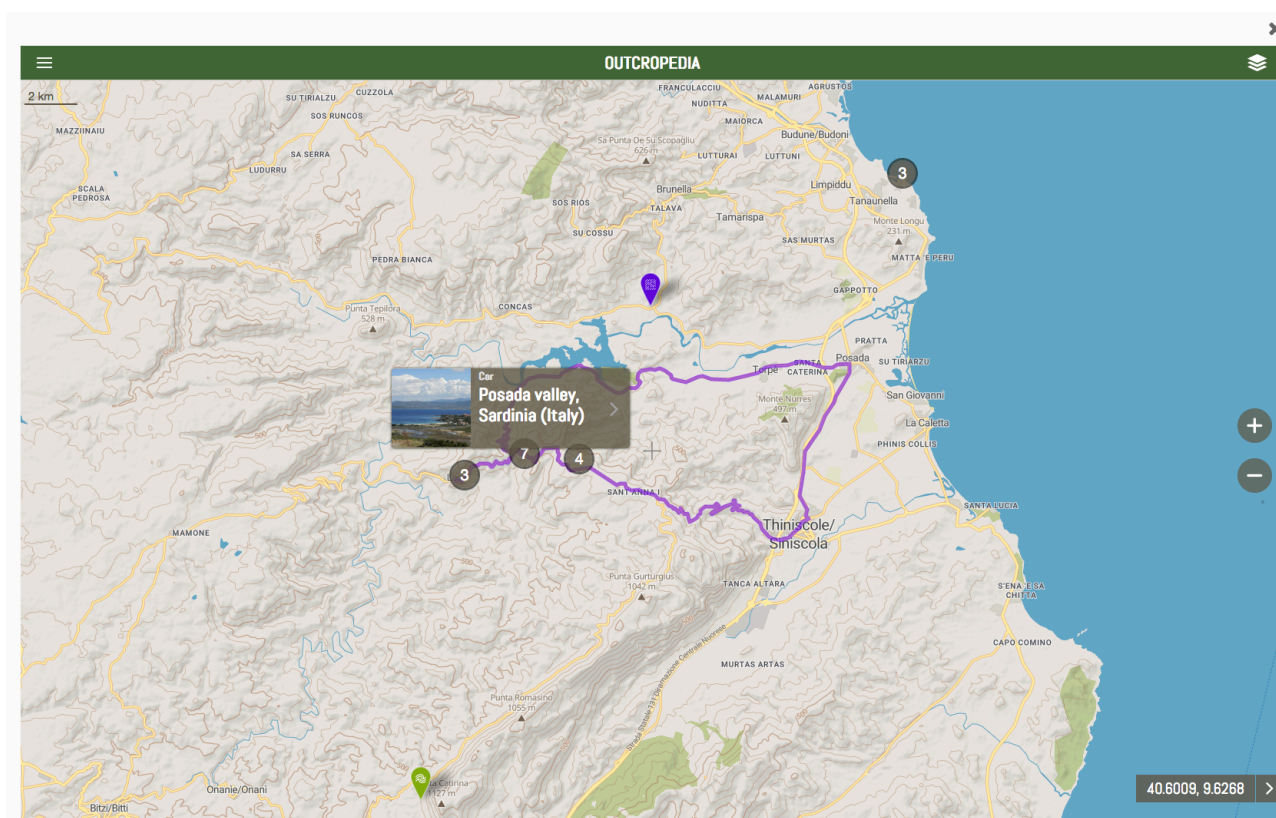
*Screen shot of the main page of the new site of Outcropedia. The numbers in the circles indicate the number of the photos in the are at the chosen scale. To view the photo it is enough to zoom in.*

We uploaded the most part of the photos of the old site. In addition the photos are now divided into categories: **Boudinage, Faults, Folds, Foliation, Fractures, Joints, Veins, Lineations, Metamorphic Rocks, primary structures, sedimentary, magmatic rocks, Shear Zones.**

The junior officers Dr Anna Chanou and Manuel De Paz are responsible of the maintenance of the site and of the checking of the new entries. In the new version it is now possible to upload Field Trips (**GeoTours**) both by car and by hiking. Analogously to outcrops, field trips are of primary importance for learning and teaching in structural geology and tectonics (but not only) and the availability of a world-size database is a very nice opportunity both for teaching and diffusion of the geological knowledge. We enclose an example of a Field trip in Sardinia (Italy) in the new Website. The responsible of the GeoTours is the junior officer Salvatore Iaccarino under the supervision of Rodolfo Carosi.

Finally, Outcropedia can also be used to store information on key sites of interest of other commissions (e.g. places where there are aspects of the interest of the stratigraphy, geoscience information commissions, etc.). In this way most part of the geoscience community could benefit of the initiative of the TecTask.

We plan to develop an **Outcropedia App** for smartphones, with the possibility to easy use Outcropedia and to upload photos and descriptions of outcrops directly from the mobile in the field, after the acquisition of each georeferenced photo.



*Screen shot of GeoTour along the Posada valley in Sardinia (Italy). The number in the circles indicate the number of photos visible as the image is zoomed in.*

## 6. Major contributor and player at the 2020 IGC in Delhi.

We have been in close contact with the organizing committee of the 36<sup>th</sup> IGC – Delhi 2020 by the very active TecTask vice-Chair Prof. Manish Mamtani. After discussions amongst TecTask members as well as an online survey (<https://www.surveymonkey.com/results/SM-NCN9MQBP/>), together with consensus with the organizing committee of IGC, the following 6 symposia have been approved and listed in the 2<sup>nd</sup> circular of the 36<sup>th</sup> IGC to be held in 2020 in Delhi (India) as part of Theme-27 entitled “ROCK DEFORMATION AND RHEOLOGY”. The main coordinator of this theme is Prof. Manish Mamtani (Vice-Chair, TecTask) and Prof. Rodolfo Carosi (Chair, TecTask) is also involved in the coordinating team.

- a. *Field Structures – Macro to Meso Scale Deformation Processes*
- b. *Rheology and Deformation Mechanisms in the Earth*
- c. *Fabric Analysis – Past, Present and Future*
- d. *Structural Control on Fluid Flow and Mineralization*
- e. *Extrapolating Experimental Rock Deformation Results to Field Structures*

*f. Structural Geology and Society - Restoration, Geothermal Energy and Hydrocarbons*

**Screen Shot of Page-26, Theme-27 from 2<sup>nd</sup> Circular of 36<sup>th</sup> IGC**



**Theme 27 | Rock Deformation and Rheology**

**Coordinators:** M.A. Mamtani [mamtani@gg.iitkgp.ac.in](mailto:mamtani@gg.iitkgp.ac.in) (India),  
Anupam Chattopadhyay [anupamchatto@gmail.com](mailto:anupamchatto@gmail.com) (India),  
Rodolfo Carosi [rodolfo.carosi@unito.it](mailto:rodolfo.carosi@unito.it) (Italy)

**Symposia**

**27.1 Field Structures – Macro to Meso Scale Deformation Processes**  
Bernhard Grasemann [bernhard.grasemann@univie.ac.at](mailto:bernhard.grasemann@univie.ac.at) (Austria), T. K. Biswal (India)

**27.2 Rheology and Deformation Mechanisms in the Earth**  
Nibir Mandal [nibirmandal@yahoo.co.in](mailto:nibirmandal@yahoo.co.in) (India), Susan Ellis (New Zealand), Joel Sarout (Australia), Santanu Misra (India)


**27.3 Fabric Analysis – Past, Present and Future**  
Richard Law [rdlaw@vt.edu](mailto:rdlaw@vt.edu) (USA), Toru Takeshita (Japan), Koushik Sen (India)

**27.4 Structural Control on Fluid Flow and Mineralization**  
Paul D. Bons [paul.bons@uni-tuebingen.de](mailto:paul.bons@uni-tuebingen.de) (Germany), Tridib Kumar Mondal (India), Sivaji Lahiri (India)


**27.5 Extrapolating Experimental Rock Deformation Results to Field Structures**  
Alison Ord [alison.ord@uwa.edu.au](mailto:alison.ord@uwa.edu.au) (Australia), Santanu Bose (India), H.B. Srivastava (India), J.H. Kruhl (Germany), Virginia G. Toy (New Zealand)

**27.6 Structural Geology and Society - Restoration, Geothermal Energy and Hydrocarbons**  
Rosalda Punturo [punturo@unict.it](mailto:punturo@unict.it) (Italy), Dominico Liotta (Italy), Chris Hilgers (Germany), Susanta Kumar Samanta (India), Sandeep Bhatt (India)

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GEOSCIENCES: THE BASIC SCIENCE FOR A SUSTAINABLE FUTURE



Other engagements of TecTask in IGC 2020 are as follows:

- Prof. Rodolfo Carosi (Chair, TecTask) is co-convenor of a symposia entitled “Brittle vs. Viscous Deformation in the Himalaya – Field to Experiments” and “Tectonic evolution of the Himalaya” in another Theme (The Himalaya – Anatomy of an Evolving Mountain Chain).

- Prof. Alison Ord (EC member and former Chair, TecTask) is co-convening a symposium “Extrapolating Experimental Rock Deformation Results to Field Structures”.
- Prof. Bruce E. Hobbs (TecTask Officer) is under active consideration for a Plenary Talk by the IGC committee.

### **Funding request for 2019:**

The commission for Tectonics & Structural Geology kindly request financial support the forthcoming year 2019 in the amount of:

- € 2,000: Early-career researcher bursaries from developing countries to attend the 22<sup>nd</sup> International Conference on Deformation Mechanisms, Rheology and Tectonics, June 2019 Tübingen (Germany). This type of international conference is of primary importance for SG and T.
- € 500: Outcropedia website annual maintenance
- € 500: TecTask website maintenance
- € 4,500 + € 500 of annual maintenance: development of an **App** for mobile for Outcropedia with the possibility to easily use Outcropedia and to upload photos of outcrops directly from smartphones in the field
- € 1,500: attending to the IUGS-EC meeting in Beijing
- € 4,000: meeting of the TecTask executive committee to plan the future of the commission and its activities

**Total requested budget for 2019 of 13.500,00 euro or 15.555,56 US Dollars**

Houston, January 15<sup>th</sup> 2019

Dr. Hermann Lebit

IUGS Commission  
Tectonics & Structural Geology  
Secretary General