

Quaternary Perspectives



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The first INQUA-PAGES Conference for Early-Career Researchers 2018:

ISLR18: Impacts of sea-level rise from past to present



Fig. 1. Marie-France Loutre (PAGES Executive Director) and Allan Ashworth (INQUA President) at the ISLR18 meeting 'Impacts of Sea-Level rise from past to present'. The meeting in Utrecht, The Netherlands, brought together early career researchers from 23 countries studying various aspects of sea-level rise. This was the first meeting directly co-sponsored by INQUA and PAGES and led by ECR's from both organizations. The meeting was a great success and provides a model for how both organizations can serve the Quaternary community.

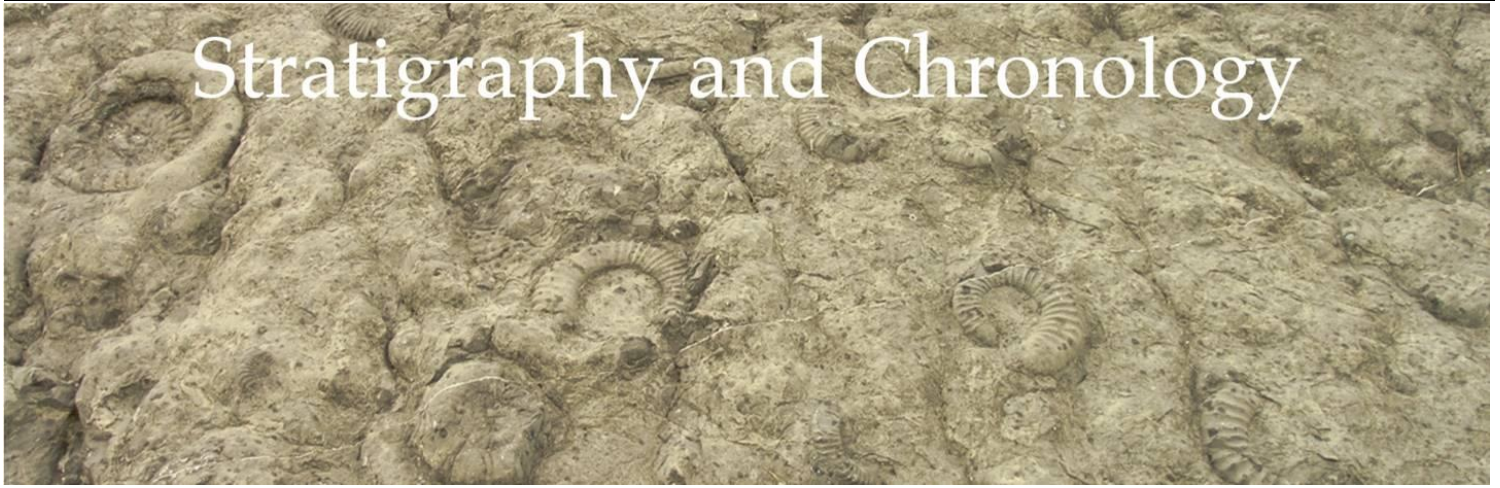
In 2018, the INQUA conference for early-career researchers (ECR) was held from Sunday 26 to Wednesday 29 August at Utrecht University, the Netherlands. This conference was the first meeting directly co-sponsored in a joint effort by [INQUA](http://www.inqua.org) and [PAGES](http://www.pages.org), with the title 'ISLR18: Impacts of sea-level rise from past to present' (Fig. 1).

This event brought together more than 70 ECR delegates from 23 countries, to showcase worldwide research in a broad range of disciplines working with sea-level change (Fig. 2).



Fig. 2. ISLR18 official conference photo.

Stratigraphy and Chronology



International Focus Group on Tephrochronology and Volcanism - INTAV

Project leader: David J. Lowe (University of Waikato, New Zealand)

Report on the INTAV international tephra conference "Crossing New Frontiers: Tephra Hunt in Transylvania"

Moieciu de Sus, Romania, 24 June-1 July 2018.

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The International Focus Group on Tephrochronology and Volcanism (INTAV) held a tephra conference, "Crossing New Frontiers: Tephra Hunt in Transylvania", at Moieciu de Sus, near Braşov in the southern Carpathian Mountains of Transylvania, Romania, from 24 June to 1 July, 2018. INTAV is a long-standing (from 1961) global tephra research group active within the Stratigraphy and Chronology Commission (SACCOM) of INQUA. It organises specialist tephra meetings every four years or so on average, although the most recent meeting (before this one in Romania) was in 2010 in Kirishima, Japan. The Romanian tephra meeting was convened by Daniel Veres (Romania) and Ulrich Hambach (Germany), together with support from the INTAV executive committee of Britta Jensen (Canada), Peter Abbott (UK/Switzerland), Takehiko Suzuki (Japan), Siwan Davies (UK), and David Lowe (New Zealand). By all measures, the conference must be judged a tremendous success, helping to advance the seven objectives of INTAV's underpinning EXTRAS project (EXTending tephRAS as a global geoscientific research tool stratigraphically, spatially, analytically, and temporally), allowing insight into much of the excellent research being undertaken in Romania and nearby countries, and, in part because of the special venue and the conference programme construction, providing great opportunities for discussion, networking, and interactions between the wide range of participating researchers, and also, not least, because of the warmth, friendliness, and

helpfulness of the hosts at the venue and during the field trips. No stone was left unturned by Daniel Veres and Ulrich Hambach, and their friendly student and postdoctoral helpers, to ensure that all participants felt very welcome and were well looked after for their entire stay in Romania.

The conference also featured, notably, strong contributions in volcanology as well as many papers representing the explosion of research on cryptotephra in a range of environmental settings, and on new methods for detecting and analysing them including the use of X-ray fluorescence core scanners (such as ITRAX) and computed tomography (CT) imaging, new methods for analysis including trace element mapping of small glass shards using multiple line scans with LA-ICP-MS, new dating applications, and a number of novel applications of tephra deposits that are best described as 'beyond isochrons'.



Fig. 11. Participants at the tephra conference awaiting the opening talk. Photo: David Lowe.

Held at the spectacular mountain resort 'Cheile Gradistei' Fundata, the meeting involved 92 participants (Fig. 11) – a record number for an INTAV meeting – from 20 countries. The greatest numbers were from the UK (24), Germany (14), Romania (7) and the USA (5) with up to four representatives from each of Denmark, Russia, Norway, Sweden, Canada, Italy, Switzerland, Turkey, Japan, China, Poland, Serbia, Hungary, Singapore, Iceland, and New Zealand. The total included 22 students, with 17 of these undertaking PhDs.

Participants were treated to 94 stimulating papers, including 41 oral papers in seven sessions and 53 poster papers presented in three sessions. All the



Fig. 12. Participants in front of columnar basalt in the Perşani volcanic field (active from 1.2-0.6 Ma) in the southern Carpathians during the mid-conference field trip. Photo: Pierre Oesterle.

poster papers remained on display for the entire conference. Seven outstanding (invited) keynote presentations were made, one in each oral session, by Sabine Wulf (UK), Michael Sigl (Switzerland), David Karátson (Hungary), Caroline Bouvet de la Maisonneuve (Singapore), Maarten Blaauw (UK), John Westgate (Canada), and Vera Ponomareva (Russia). A special evening lecture was given by Ioan ('Nino') Seghedi (Romania) entitled "Geological and volcanological outline of the Carpathian-Pannonian region with emphasis on the Romanian territory", which summarised the complex regional geological setting and very active tectonism as well as local volcanism in the southern Carpathians. The presentation helped to set the



Fig. 13. Bran (Dracula) Castle, Transylvania, visited during the mid-conference excursion. Not far from the conference venue at Moieciu de Sus, the castle in Bran was completed in 1388 AD. Photo: David Lowe.

scene for the one-day mid-conference field excursion in the region (and the later post-conference excursion). The mid-conference trip was led by Ioan Seghedi, Daniel Veres, and Ulrich Hambach (Seghedi et al., 2018) and included a visit to the basaltic Perșani volcanic field (Fig. 12) and a very popular viewing of Dracula's castle in Bran at the end of the day (Fig. 13).

The conference abstract volume is available at the conference website (Hambach and Ulrich, 2018). Papers arising from the conference are to be assembled into a special tephrochronology volume of Quaternary International (in preparation).

The conference was supported financially and in kind by a number of sponsors (all listed in the programme and abstracts volume and on the conference website) and an INQUA grant (1710P) of €4600 obtained by INTAV through SACCOM (supported by commission president, Mauro Coltorti). The generous INQUA grant was used to help 18 early career researchers (ECRs) and students to travel to the meeting (Fig. 14). Most were from within Europe (14) but four travelled from beyond Europe including several from as far away as New Zealand.



Fig. 14. Ten of the 18 happy ECR and student recipients of the INQUA travel grants. Photo: David Lowe.

Another feature of the conference was an excellent Bayesian-based age modelling workshop (Fig. 15) led by Maarten Blaauw (UK) following his insightful keynote paper, "More dates and use Bayes \odot recommendations for robust age-depth models". Maarten's presentation is available on the conference website. Steve Kuehn (USA) reported on progress on the development of the INTAV global database project and provided new updated protocol sheets for evaluation by tephra community in the next few months.

Four students were awarded certificates and cash prizes (sponsored by the University of Waikato, New Zealand) for first and second places in poster



Fig. 15. Maarten Blaauw (right) leading the age-modelling workshop for around 25 participants. Photo: David Lowe.

and oral presentations (Fig. 16). As noted by the judges, the standards of presentation were uniformly high throughout the conference and so their job was a difficult one.



Fig. 16. The winners and runners-up for best student oral and poster papers. From left, Jayde Hirniak, Jennifer Saxby, Hannah Buckland, and Ali Monteath. Photo: David Lowe.

A number of awards were presented at the conference dinner, which also featured traditional Romanian dancing and music. Two INTAV Honorary Life Memberships were awarded to Gudrun Larsen (Iceland) (the award was received on Gudrun's behalf by her colleague Esther Ruth Gudmundsdottir; Fig. 17) and to (a surprised) David Lowe (New Zealand). Their achievements in tephrochronology were described in brief by Andrew Dugmore (UK) and Peter Abbott, respectively. Only 14 such awards have been made internationally since they were instigated formally about 20 years ago by INTAV.



Fig. 17. Esther Ruth Gudmundsdottir (Iceland) receiving the INTAV Honorary Life Member certificate on behalf of Gudrun Larsen (Iceland) from INTAV president Takehiko Suzuki. Photo: David Lowe.

John Westgate (Canada) was awarded, to universal acclaim, a special framed certificate to mark the 50th anniversary of the publication of his pathfinding paper (with the late D.G.W. Smith) in 1969 on the use of the electron probe to characterise glass shards in tephra to enable them to be correlated over long distances (Figs. 18) (Smith and Westgate, 1969). The venue hosts also baked a commemorative chocolate layer-cake to mark the occasion (Fig. 18).

On the last day of the conference, a business meeting was held by the executive of INTAV at which the future of INTAV as a global tephra community was discussed, including possible roles in INQUA and IAVCEI or as a stand-alone organisation (see Lowe et al., 2018, pp.3-4). The forthcoming INQUA congress in Dublin (2019) was also noted, in which four sessions relating to tephrochronology are currently open for abstracts.



Fig. 18. Certificate and special chocolate (layer) cake prepared to commemorate the 50th anniversary of the publication of John Westgate's pioneering paper (with D.G.W. Smith) in 1969. From left, Takehiko Suzuki, Cora and John Westgate, Britta Jensen, Peter Abbott, and David Lowe.

The conference was followed by a compelling three-day post-conference field trip involving 32 participants. It was led by David Karátson, Daniel Veres, and Ulrich Hambach (Karátson et al., 2018) along with student/ECR helpers. The excursion, which ended in Bucharest, included a visit to a huge and impressive underground salt mine at Slănic; proximal rhyolitic and dacitic tephra deposits, domes, and craters; the mountainous impacts of dynamic and complex tectonism; beautiful monasteries, churches, walls and castles and other buildings from Romania's rich history; loess encompassing distal tephra and palaeosols on the Wallachian plains; landsliding landscapes; and spectacular mud volcanoes (Fig. 19).



Fig. 19. Top of a mud volcano in a natural reserve at Berca belching mainly methane derived from deposits ~3 km below. In the background are hills that have been subject to very fast rates of mass movement (landsliding). Photo: David Lowe.

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DATESTRA - 1612F

Project Leaders: Pierluigi Pieruccini (University of Torino, Italy), Markus Fiebig (University of Natural Resources and Life Sciences Vienna, Austria), Guzel Danukalova (Russian Academy of Sciences, Russia).

Report from the Section on European Quaternary Stratigraphy (SEQS) with special attention to the IFG Project 1612F (DATESTRA)

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The SEQS-project DATESTRA for the 2016-2019 intercongress period will aim to build a Database of Terrestrial European Stratigraphy (DATESTRA). This is seen as an European Geographic Database of the key-sites of Quaternary importance across Europe following the activities carried out by SEQS during the previous Intra-Congress periods.

The launch of the SEQS project DATESTRA occurred at the INQUA-SEQS 2016 Meeting in Armenia, and a prototype (25 specially compiled Quaternary sites for Italy) was presented by the Italian team (P.Pieruccini, M.Coltorti, M. Palombo, A. Bertini, B. Sala, D. Magri, C. Ravazzi) to the SEQS audience at the 2017 SEQS-DATESTRA workshop and meeting held in Tautavel, France, 9-15 September. About 30 participants joined this meeting, organized by Vincenzo Celiberti and his collaborators and hosted by the EPCC CERP Centre Européen de Recherches Préhistoriques de Tautavel in collaboration with UMR 7194 "HNHP" du CNRS, MNHN-UPVD-CERP de Tautavel and UPVD Université de Perpignan.

An extra DATESTRA workshop was held on Sunday the 10th of September (Fig. 20). 35 oral and poster contributions authored by 125 scientists were presented during the meeting. Thijs Van Kolfschoten gave a touching speech in memoriam of Wim Westerhoff, past SEQS President and Secretary who passed away last May 2017. The scientific presentations focused on cross-disciplinary and cross-regional correlation of geological, palaeontological, geochronological, geomorphological, archaeological, and environmental records in order to develop Quaternary stratigraphy all over Europe and adjacent territories. Mauro Coltorti presented advances of the INQUA-Project CROSSTRAT on the reliability of radiometric dating in a test-region like Sardinia, in Italy. A dedicated DATESTRA session was held as well, including contributions from Italy, Russia and Poland. Contributions will be published in a Special Issue of Quaternary International (already accepted) titled "Quaternary stratigraphy and hominids around Europe: SEQS 2017 meeting". The meeting continued with a three-day fieldtrip that allowed participants to visit the well-known Caune de l'Arago where, within a complex but well-exposed Middle Pleistocene sequence, the remnants of *Homo heidelbergensis* (Arago XXI) were found (Fig. 21).

original palaeoanthropological collection. Afterwards the fieldtrip moved to Les Orgues-Ille sur Tet where Marc Calvet and Magali Delmas (Université de Perpignan) showed us the litho-, morpho- and chronostratigraphical setting of the Pleistocene continental successions and their relationships with the coastal marine Pliocene record. Moreover, the staircase of alluvial terraces along the Roussillon were visited and the field trip ended at the Grottes Canalettes, in the Pyrenees.

The 2018 SEQS meeting was held under the organization of Andrej Mihevc and Nadja Zupan at the Karst Research Institute, Postojna, Slovenia, 12-18 September. On the first day of the meeting, fourteen talks were presented. Topics included local geology in Slovenia, especially including karst features and tectonic developments, and contributions from British, Croatian, Russian, Polish and Ukrainian colleagues. On the early afternoon of the first day participants took a three-hour train ride into the amazing Postojna cave. Andrej Mihevc introduced the group to fascinating outcrops and supplied all kinds of interesting facts around the previously called "Adelsberger Grotte". After the exciting field trip another seven talks with focus on palaeontology were offered. The next morning included presentations on field work from Italy, Turkey, France, Poland and the Transbaikalian region. In the afternoon the DATESTRA session showcased advances in the project from Ukraine, Lithuania, Russia and Poland. In the final poster session nine scientific inputs were presented and announced. During the final day of field trips the SEQS group acquired new knowledge about classical Karst systems including the UNESCO site Skocjanske Jame, blind valleys, the amazing Alpine cave Snezna jama and the Ljubljana basin. The 2018 meeting brought exposed all participants (Fig. 22) to valuable information about Quaternary stratigraphy in cave and karst environments.



Fig. 21. SEQS meeting in France 2017.

Christian Perrenoud, Anne Marie Moigne and Vincenzo Celiberti presented the geological, lithostratigraphical, biostratigraphical, morphostratigraphical, chronostratigraphical, palaeoanthropological and archaeological setting of the site and the participants were allowed to observe in detail the stratigraphical section opened in the excavations. The fieldtrip continued with the visit to the Prehistory Museum of Tautavel and the European Research Centre of Tautavel, where Marie-Antoinette de Lumley showed the famous



Fig. 22. SEQS meeting 2018 in Slovenia.

We are looking forward to the next SEQS meeting in 2019 during the INQUA congress in Dublin, where a session with the name: "The Quaternary of Europe: stratigraphical perspectives and tools for correlations" is scheduled. Please submit abstracts and participate!



Fig. 20. DATESTRA meeting 2017 France.