

Conference Announcements: **JpGU-AGU 2020**

2020 JpGU-AGU Joint Meeting: Trapped-charge Dating Session



JpGU - AGU Joint Meeting 2020

For a Borderless World of Geoscience

Japan Geoscience Union, American Geophysical Union

24-28 MAY 2020

Makuhari Messe, Chiba, Japan

Session : **Innovative Applications of Trapped-Charge Dating to Quaternary Geochronology**

Abstract Deadline : **18 February, 2020**

Session Date: 27 May 2020

Convener: Toru Tamura, Shin Toyoda, Yuji Ishii, Sumiko Tsukamoto

Conference webpage : http://www.jpгу.org/meeting_j2020/

Session abstract:

Trapped-Charge Dating (TCD) is a general term for absolute dating methods that use trapped electrons in crystal lattice, such as optically-stimulated luminescence (OSL) and electron spin resonance (ESR) dating. TCD presented one of the most successful progresses in geoscience and archaeology over the last 20 years, and still has a great potential in innovative applications. Technical progresses in optical dating of quartz and feldspar grains enables determination of depositional ages in a broad range from 10 to 500,000 years. Rock surface dating provides a way to determine surface exposure ages as well as burial ages of gravels. Thermochronometry with TCD is a state of the art method to determine the degradation and uplift rates on high temporal resolution. Further efforts have been made on TCD for extracting chronological information of past seismic activities. Innovative IRPL (infrared photoluminescence) method has also recently been invented. This session covers a wide range of TCD applications to problems in Quaternary geochronology as well as its technical advances. Comprehensive reviews on successful TCD applications and contributions of unestablished, challenging researches are also welcome.

For further details please contact Toru Tamura (toru.tamura@aist.go.jp)

Conference Announcements: **ISA 2020**

43rd International Symposium on Archaeometry (ISA 2020)



The 43rd International Symposium on Archaeometry (ISA 2020) will be held in Lisbon, Portugal, from May 18 to May 22, 2020, organized by Instituto Superior Técnico, Universidade de Lisboa.

The aim of the Symposium is to promote the development and use of scientific techniques, for the extraction of archaeological and historical information from the cultural heritage and the paleoenvironment.

Date: 18th to 22nd May 2020

Location: IST, Congress Centre, Lisbon (Portugal)

For more information visit the webpage
<https://www.isa2020-lisboa.pt/index.php>

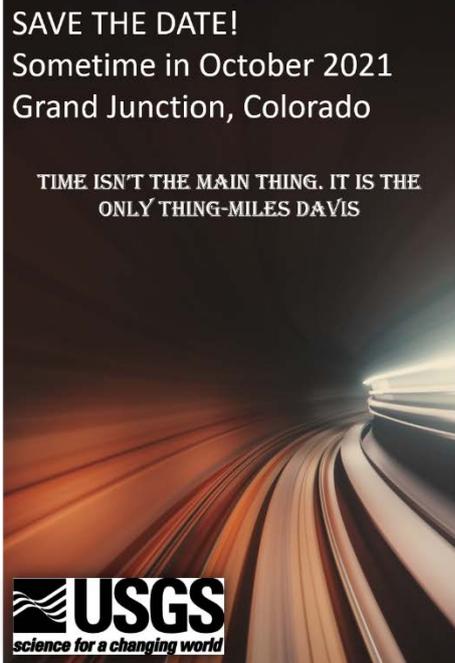
or contact
isa2020@isa2020-lisboa.pt

Conference Announcements: **NWLDW 2021**

2021 New World Luminescence Dating Workshop

SAVE THE DATE!
Sometime in October 2021
Grand Junction, Colorado

TIME ISN'T THE MAIN THING. IT IS THE
ONLY THING-MILES DAVIS



2021 New World Luminescence Dating Workshop

Your hosts are Shannon Mahan and Harrison Gray, US Geological Survey



JOIN US FOR A
DAY AT THE DEPT
OF ENERGY
CALIBRATION
PADS AND
BOREHOLES FOR
PORTABLE
GAMMA
SPECTROMETERS



TECHNICAL
SESSIONS WILL
FOLLOW FOR 1.5
DAYS



FINISH WITH A HIKE IN
COLORADO NATIONAL
MONUMENT AND THEN
CELEBRATE GORGEOUS
GEOLOGY AT ONE OF THE MANY
BREW PUBS AND VINEYARDS IN
THE AREA

For more information please contact

Shannon Mahan (smahan@usgs.gov)

or

Harrison Gray (hgray@usgs.gov)

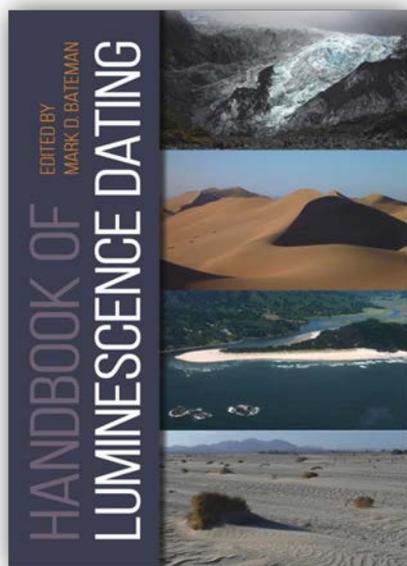
Book Announcements: **Handbook of Luminescence Dating**

Note: Ancient TL does not endorse this product nor encourage readers to buy the book. However, we realize it will be a useful and interesting product to many in the luminescence and ESR community.

Information from the publisher:

Book Announcements: Whittles Publishing

www.whittlespublishing.com



Handbook of Luminescence Dating

Edited by Mark D. Bateman

- An accessible guide for archaeologists and Quaternary scientists and geologists
- In depth explanations of challenges and issues arising from applying luminescence dating in specific environmental and archaeological contexts
- Fully illustrated case studies show the range of approaches adopted and the reliability and precision of resultant ages
- Provides guidance on interpreting luminescence ages and using them in chronological frameworks

Contents: Principles and history of luminescence dating; From sampling to reporting; Incorporating luminescence ages into chronometric frameworks; Applications in aeolian environments; Applications in loessic environments; Applications in glacial and periglacial environments; Applications in fluvial and hillslope environments; Applications in coastal and marine environments; Applications of luminescence dating to active tectonic contexts; Applications in archaeological contexts; Rock surface burial and exposure dating; Future developments in luminescence dating

*ISBN 978-184995-395-5 240 x 170mm 416pp over 130 photographs, diagrams, charts, etc.
colour throughout hardback £90*

Full information is available at

http://www.whittlespublishing.com/Handbook_of_Luminescence_Dating

Announcements: **Inter-Laboratory Comparison**

Inter-laboratory comparison to measure the elemental concentration or specific activity of uranium, radium, thorium and potassium in sediment

Various OSL labs in the New World luminescence dating community have recently decided to perform a small inter-laboratory comparison, specifically to measure the element concentration of uranium, radium, thorium and potassium in sediment. The measurement can be any desired method: ICP-MS, XRF, gamma spectrometry, alpha or beta counting, or atomic emissions (flame photometer). We just need as many labs to participate as possible so we can see the wide range of precision and accuracy for a natural sample. We would like to keep the project open to other labs in North and South America, as well as around the World for participation. Simply raise your hand to let us know your interest!

As we are all aware, the last wide-scale inter-lab comparison (Murray et al., 2015) ended on a perplexing note: the measurement of the equivalent dose had good reproducibility between labs, with an average relative standard error (RSE) between 2 and 3 %. Unexpectedly, however, the (simple) measurement of uranium, radium, thorium and potassium was far more dispersed, ranging from 3 to 13 % RSE. Perhaps this was a sign that we have neglected the bottom half of the age equation for too long! The only way to revolve this is to repeat the exercise, with the hope of identifying something that we have neglected.

We have recently retrieved two buckets of sand from a Colorado River terrace at a quarry in Grand Junction (Colorado) USA. Our purpose in collecting this massive, naturally homogenized, silty sand was two-fold: A larger aim will be to return to that quarry next year for an inter-laboratory comparison with portable gamma spectrometers at a natural site that we can all access and a secondary aim is to collect some of this sand and standardize it at the USGS Reference Sediment Laboratory for distribution to all that would like to measure the K, U, and Th activities or elements. The sample would be split, processed, and bottled at the USGS Reference Laboratory with QA/QC procedures. We anticipate producing about 200 uniquely numbered bottles of approximately 200 g of sample which would go out to labs that expressed an interest in helping the community study. If there is sufficient interest, then the sample will be measured by a certified laboratory (perhaps several?). This would provide us with an independent base of reference to which we can objectively compare our individual performance against. We plan to present the results, anonymized, in the LED2020 meeting.

For the labs in North America, Grand Junction is of great interest because for the past 40 years the US Department of Energy has maintained various horizontal pads and vertical wells for the purpose of calibration of portable gamma detectors. Earlier this autumn, we united five laboratories at this site, during the same weekend. Due to unforeseen reasons, we could not access the quarry during that weekend, sadly, but in the future we plan to hold community calibrations there as well. After a hard day of calibration, we can retire to several nearby vineyards to discuss the science.

Coordinators: Sebastien Huot shuot@illinois.edu and Shannon Mahan smahan@usgs.gov

Murray, A., Buylaert, J.-P., Thiel, C., 2015. A luminescence dating intercomparison based on a Danish beach-ridge sand. *Radiation Measurements* 81, 32-38. <http://doi.org/10.1016/j.radmeas.2015.02.012>

Announcements: **Various Ancient TL matters**

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or

ancienttl.org

New Databases for measurement procedures and calibration sites

In summer 2019 Ancient TL made available an overview of freely available tools for trapped charge (dating) data analysis (see <http://ancienttl.org/software.htm>). Our goal is to add to this service by adding two new databases

1. ***A collection of calibration sites for dosimetry measurements:*** Portable gamma spectrometers and other dosimetry methods need to be calibrated on a regular basis, but information about suitable sites is usually spread by word of mouth. Goal is to list calibration sites by continent and to make available pertinent information to any interested user. This can include anything from government provided calibration pads, to field sites, to brick stacks in a laboratory.
2. ***A list of measurement procedures:*** The number of measurement procedures for quartz, feldspar and other minerals is growing by the months and it is increasingly difficult to keep track. Review articles are quickly outdated. Our goal is to provide an overview of different measurement procedures starting from MAAD, SARA and SAR to IRPL

The software was compiled and is updated by Sebastian Kreutzer. **Ancient TL is looking for volunteers to help in a similar way with the two lists above.**

Please contact Regina DeWitt (dewittr@ecu.edu) for more information.