

Quaternary Research Center Workshop on Clumped Isotopes

Final Schedule

Continental breakfast provided ½ hour before the session start each day.

Thursday, April 15th

1) Background & Theory

9:30: Eric Steig, Kate Huntington, and Paul Dennis *Introduction to the Workshop*

9:45: John Eiler, California Institute of Technology: *Overview and history of clumped isotope geochemistry*

10:30 Edwin Schauble, University of California, Los Angeles: *Equilibrium theory of isotopic ordering (heavy likes heavy)*

11:00: Coffee break

11:20: Weifu Guo, Carnegie Institution of Washington: *Kinetic fractionations of clumped isotopologues: theory and examples*

11:50: Discussion

12:30 Lunch provided

2) Applications

1:30 Kate Huntington, University of Washington, *Clumped isotopes in terrestrial carbonates: paleoclimate, paleoaltitude, and temperature in the shallow crust*

2:00: Matthieu Daeron, Laboratoire des Sciences du Climat et de l'Environnement: *Gif-sur-Yvette: Clumped isotopes in speleothems*

2:30: Hagit Affek, Yale University: *Clumped isotopes in atmospheric CO₂*

3:00: Coffee

3:20: Ben Passey, Johns Hopkins University: *Clumped isotopes in recent and fossil soil carbonates*

3:50: Panel Discussion

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3) Applications and Measurement Techniques

9:00: Laurence Yeung, University of Southern California: *Clumped-isotope constraints on stratospheric CO₂*

9:20: Thomas Schmid, ETH-Zurich: *Automated measurements of cave-pool carbonates and Mesozoic belemnites.*

9:40: Kate Dennis, Harvard University: *Harvard results from clumped isotope thermometry"*

10:00: Coffee

10:20: Naohiro Yoshida, Tokyo Institute of Technology: *Analysis of clumped isotopes on the Delta-XP and its applications for some atmospheric and biogeochemical studies*

10:50: Stefano Bernasconi, ETH-Zurich: *Clumped isotope measurements on small carbonate samples with a Kiel IV-MAT 253 system*

11:20: Discussion

12:00: Lunch

4) New frontiers in measurement techniques

1:00 Poster viewing

1:30: Paul Dennis, University of East Anglia: *A phenomenological description of clumped isotope signal scrambling due to ion-molecule interactions: Progress towards new ion source designs*

2:00: Paul Wheeler, Isoprime: *IsoPrime100 - A low resolution clumped-isotope system for high-precision D₄₇ analysis*

2:30: Aaron van Pelt, Picarro: *Cavity ring-down-spectroscopy analyzers and applications to clumped isotopes*

3:00 Coffee Break

3:15: Panel Discussion

6:30: Banquet dinner.

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Posters

Osamu Abe, Nagoya University: *Clumped isotopes in various coral skeletons*

Rob Eagle, Caltech: *Clumped isotope thermometry in bioapatite: calibration and application to questions in paleophysiology and paleoclimatology*

Anne-Lise Jourdan, Imperial College: *Establishing clumped isotopes at Imperial College: application to carbonate diagenesis*

Brad Rosenheim, Tulane University: *Initial multiply-substituted isotopologue measurements from the isoprime*

Mikhail Vasiliev, Tokyo Institute of Technology: *Clumped isotope analysis of present living mollusks collected from Tokyo Bay, Yokohama, Japan*

Shikma Zaarur, Yale University: *Clumped isotopes thermometry in land gastropod carbonate shells*

Aradhna Tripathi, UCLA, Caltech: *Towards CLUMPMAP: Glacial climate from clumped isotope thermometry*

Aradhna Tripathi, UCLA, Caltech: *Hot and heavy or cool and fresh: resolving meteoric from burial diagenesis using clumped isotopes*

Saturday, April 17th

4) Technical Session, 8:30 to 12:30 (limited to 35 registrants)

Discussion and brief introduction of technical topics, led by the individual in parentheses

Automation (Ben Passey)

Purification techniques (Kate Huntington)

Diagenesis (TBA)

Discussion of reference frames and standards (Paul Dennis)

Laser spectroscopy (Aaron van Pelt)

Mass spectrometry (Andreas Hilkert, John Eiler)

12:30 Banquet Lunch

2:00 Meeting ends.