

WEIFU GUO**CURRICULUM VITAE**

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EDUCATION

- Ph.D. in Geochemistry** **California Institute of Technology** (8/2002-9/2008)
Thesis: Carbonate clumped isotope thermometry: application to carbonaceous chondrites and effects of kinetic isotope fractionation
- B.S. in Geochemistry** **University of Science and Technology of China** (9/1997-6/2002)
Distinction: Guo Moruo Fellowship

PROFESSIONAL EXPERIENCE

- May 2011-Present:* Assistant Scientist Woods Hole, MA
Woods Hole Oceanographic Institution, Department of Geology and Geophysics
- Oct. 2008-Apr. 2011:* Carnegie Postdoctoral Fellow Washington, DC
Carnegie Institution of Washington, Geophysical Laboratory
*Development of EA-CF-IRMS system for multiple sulfur isotope analysis of organic matter;
Investigation of the mass independent sulfur isotope fractionations associated with SO₂
ultraviolet photolysis and their implications for interpreting Archean sulfur isotope records.*
- Apr. 2009-Apr. 2011:* Visiting Research Associate College Park, MD
University of Maryland, Department of Geology
*Investigation of the mass independent sulfur isotope fractionations associated with SO₂
ultraviolet photolysis; Determination of 'clumped isotope' effects in dissolved inorganic carbon.*
- Aug. 2002-Sep. 2008:* Graduate Research/Teaching Assistant Pasadena, CA
California Institute of Technology, Division of Geological and Planetary Sciences
Development of carbonate 'clumped isotope' thermometry and its applications in paleo-climatology, biomineralization and meteoritics; First principle theoretical modeling of equilibrium and kinetic isotope fractionations in various geological systems, especially in carbonates.

HONORS AND AWARDS

Carnegie Postdoctoral Fellowship (2008-2011), Carnegie Institution of Washington
Henshaw and Patterson Fellowship (2002-2003), California Institute of Technology
GuoMoruo Fellowship (2002), University of Science and Technology of China

PUBLICATIONS

- Daëron, M., **Guo, W.**, Eiler, J. M., Genty, D. Blamart, D., Boch, R., Wainer, K., 2011. ^{13}C - ^{18}O clumping in speleothems: observations from natural caves and precipitation experiments, *Geochim. Cosmochim. Acta*, in press
- Oduro, H. D., Kamysny, Jr. A., **Guo, W.**, Farquhar, J., 2011. Multiple sulfur isotope analysis of volatile organic sulfur compounds and their sulfonium precursors in coastal marine environments, *Mar. Chem.*, 124, 78-89.
- Rumble, D., Young, E., Shahar, A., **Guo, W.**, 2011. Stable isotope cosmochemistry, *Elements*, 7, 23-28.
- Guo, W.**, Mosenfelder, J. L., Goddard, W. A., Eiler, J. M., 2009. Isotope fractionations associated with phosphoric acid digestion of carbonate minerals: Insights from first-principles theoretical modeling and clumped isotope measurements. *Geochim. Cosmochim. Acta*, 73, 7703-7725.
- Huntington, K., Eiler, J., Affek, H., **Guo, W.**, Bonafacie, M., Yeung, L., Thiagarajan, N., Passey, B., Tripathi, A., Daëron, M., Came, R., 2009. Methods and limitations of 'clumped' CO_2 isotope (Δ_{47}) analysis by gas-source isotope-ratio mass spectrometry. *J. Mass Spec.*, 44, 1318-1329.
- Yeung, L. Y., Affek, H. P., Hoag, K. J., **Guo, W.**, Wiegel, A. A., Atlas, E., Schauffler, S., Okumura, M., Boering, K. A., Eiler, J. M., 2009. Large and unexpected enrichment in stratospheric $^{16}\text{O}^{13}\text{C}^{18}\text{O}$ and its meridional variation. *Proc. Natl. Acad. Sci.* 106(28): 11496-11501.
- Guo, W.** and Eiler, J. M., 2007. Temperatures of aqueous alteration and evidence for methane generation on the parent bodies of the CM Chondrites. *Geochim. Cosmochim. Acta* 71(22): 5565-5575.
- Ghosh, P., Adkins J., Affek H., Balta B., **Guo, W.**, Schauble, E. A., Schrag, D., Eiler, J. M., 2006. ^{13}C - ^{18}O bonds in carbonate minerals: A new kind of paleothermometer. *Geochim. Cosmochim. Acta* 70(6): 1439-1456.

CONFERENCE ABSTRACTS

- Guo, W.**, Granger, J., Sigman, D. M. (2010). Nitrate isotope fractionation during biological nitrate reduction: Insights from first principles theoretical modeling, *Eos Trans. AGU, Fall Meet. Suppl. Abstract PP34A-08. ORAL*
- Guo, W.**, Fogel, M. L., Oduro, H. D., Farquhar, J., Rumble, D. (2010). Sulfur isotope fractionation during broadband low pressure SO_2 UV photolysis: Testing SO_2 self-shielding hypothesis in the laboratory, *Geochim. Cosmochim. Acta* 74, Supplement, A-366. *ORAL*
- Kim, S-T., **Guo, W.**, Coplen, T. B., Farquhar, J., Eiler, J. M. (2010). Temperature dependence of ^{13}C - ^{18}O clumping in synthetic aragonite: Laboratory calibration, *Geochim. Cosmochim. Acta* 74, Supplement, A-517.
- Guo, W.**, Eiler, J. M. (2010). The physical meaning of negligible 'vital effects' in carbonate clumped isotope thermometry, *2010 Ocean Science Meeting. ORAL*

- Guo, W.**, Kim, S-T., Thiagarajan, N., Adkins, J. F., Eiler, J. M. (2009). Mechanisms for 'vital effects' in biogenic carbonates: new perspectives based on abundances of ^{13}C - ^{18}O bonds, *Eos Trans. AGU*, Fall Meet. Suppl. Abstract PP34B-07. *ORAL*
- Daëron, M., **Guo, W.**, Eiler, J. M., Genty, D., Wainer, K., Niles, P., Vonhof, H., Dublyansky, J., Blamart, D. (2009). Clumped isotope thermometry of speleothems: Understanding and correcting for large kinetic fractionation induced by CO_2 degassing, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract PP11F-08.
- Granger, J., Karsh, K., **Guo, W.**, Sigman, D., Kritee, K. (2009). The nitrogen and oxygen isotope composition of nitrate in the environment: the systematics of biological nitrate reduction, *Geochim.Cosmochim. Acta* 73, A460.
- Yeung, L. Y., Affek, H. P., Hoag, K. J., **Guo, W.**, Wiegel, A. A., Okumura, M., Boering, K. A., Eiler, J. M. (2009). A 'clumped-isotope' study of stratospheric CO_2 reveals a new atmospheric process. *Geochim.Cosmochim. Acta* 73, A1484.
- Thiagarajan, N., **Guo, W.**, Adkins, J., Eiler J. (2009). Clumped isotope calibration of modern deep sea corals and implications for vital effects, *Geochim.Cosmochim. Acta* 73, A1324.
- Yeung, L. Y., Affek, H. P., Hoag, K. J., **Guo, W.**, Wiegel, A. A., Okumura, M., Boering, K. A., Eiler, J. M. (2008). Meridional variation in stratospheric ^{13}C ^{18}O ^{16}O , *Eos Trans. AGU*, Fall Meet. Suppl., Abstract V43G-2215.
- Guo, W.**, Daëron, M., Niles, P., Genty, D., Kim, S-T., Vonhof, H., Affek, H., Blamart, D., Wainer, K., Eiler, J. (2008). ^{13}C - ^{18}O Bonds in Dissolved Inorganic Carbon: Implications for Carbonate Clumped Isotope Thermometry, *Geochim.Cosmochim. Acta* 72, A336. *ORAL*
- Daëron, M., **Guo, W.**, Eiler, J., Genty, D., Wainer, K., Affek, H., Vonhof, H., Blamart, D. (2008). Absolute Speleo-Thermometry, Using Clumped Isotope Measurements to Correct for Kinetic Isotope Fractionations Induced by CO_2 Degassing, *Geochim.Cosmochim. Acta* 72, A193.
- Affek H, **Guo, W.**, Daëron, M., Eiler, J. M. (2008) 'Clumped Isotopes' in Speleothem Carbonate and Atmospheric CO_2 – Is There a Kinetic Isotope Effect? *Geochim.Cosmochim. Acta*, 72, A6.
- Eiler, J., **Guo, W.**, Huntington, K., Passey, B. (2008) High-Precision Isotopic Analysis: Lessons from 'Clumped Isotope' Geochemistry, *Geochim.Cosmochim. Acta* 72, A240.
- Came, R., Brand, U., **Guo, W.**, Veizer, J., Azmy, K., Eiler, J. (2008) Application of Carbonate 'clumped Isotope' Thermometry to Marine Brachiopods from Icehouse and Greenhouse Periods in the Paleozoic Era -- Preliminary Results, *Joint Meeting of The Geological Society of America, Soil Science Society of America. etc.*
- Guo, W.**, Niles, P., Daëron, M., Eiler, J. M. (2007). Isotope fractionations associated with degassing of CO_2 aqueous solutions and its implications for carbonate clumped isotope thermometry, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract PP43B-1276.
- Guo, W.**, Perronnet, M., Zolensky, M. E., Eiler, J. M. (2007). Temperatures of aqueous alteration on the carbonaceous chondrites parent bodies. *70th Annual Meeting of Meteoritical Society*, Abstract #5276. *ORAL*
- Guo, W.**, Eiler, J. M. (2006). Temperatures of aqueous alteration on CM chondrite parent bodies based on carbonate 'clumped-isotope' thermometry. *37th Lunar and Planetary Science Conference*, Abstract #2288. *ORAL*

- Guo, W.**, Eiler, J. M. (2005). $^{13}\text{C}^{18}\text{O}$ in Earth's atmosphere: a new proxy for constraining CO budget. *Eos Trans. AGU*, Fall Meet. Suppl., Abstract *A51E-0136*.
- Affek, H. P., **Guo, W.**, Eiler, J. M., Boering, K. A., Hoag, K. J., (2005). Mass-47 of atmospheric CO_2 : Tropospheric seasonal variations and stratospheric anomalies. *Eos Trans. AGU*, Fall Meet. Suppl., Abstract *B22B-08*.