# Hao Xie

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**EDUCATION**

PhD in geochemistry — expected 2021
*California Institute of Technology*

MSc. in geochemistry — 2017
*California Institute of Technology*

B.Sc in geochemistry — 2015
*University of Science and Technology of China (USTC)*

**TEACHING**

Teaching Assistant, Ge 101 Introduction to Geology and Geochemistry, *Caltech* Fall 2018-2019

Teaching Assistant, Ch/Ge 127 Nuclear Chemistry, *Caltech* — Fall 2017-2018

Teaching Assistant, Ge 1 Earth and Environment, *Caltech* — Spring 2016-2017

**PUBLICATIONS**

**Submitted:**

Shuai, Y., **Xie, H.** et al., Recognizing the pathways of methanogenesis through methane isotopologues in the subsurface biosphere. In revision at *Geochimica et Cosmochimica Acta*

Jautzy, J., Douglas P. M., **Xie, H.** et al., CH4 isotopic ordering records ultra-slow hydrocarbon biodegradation in the deep subsurface. In revision at *Earth and Planetary Science Letters*

**Peer-reviewed publications:**

**Xie H.**, Ponton C., Formolo M. J., Lawson M., Ellis G. S., Lewan M. D., Ferreira A. A., Morais E. T., Spigolon A. L. D., Sessions A. L. and Eiler J. M. (2020) Position-specific distribution of hydrogen isotopes in natural propane: effects of thermal cracking, equilibration and biodegradation. *Geochimica et Cosmochimica Acta,* 290, 235–256.

**Xie H.**, Ponton C., Formolo M.J., Lawson M., Peterson B.K., Lloyd M.K., Sessions A.L. and Eiler J.M., 2018. Position-specific hydrogen isotope equilibrium in propane. *Geochimica et Cosmochimica Acta*, 238, pp.193-207.

Thiagarajan N., **Xie H.**, Ponton C., Kitchen N., Peterson B., Lawson M., Formolo M., Xiao Y. and Eiler J.M., 2020. Isotopic evidence for quasi-equilibrium chemistry in thermally mature natural gases. *Proceedings of the National Academy of Sciences*, 117(8), pp.3989-3995.

Thiagarajan N., Kitchen N., **Xie H.**, Ponton C., Lawson M., Formolo M. and Eiler J.M. (2020) Identifying thermogenic and microbial methane in deep water Gulf of Mexico Reservoirs. *Geochim. Cosmochim. Acta* 275, 188–208.

Eiler J. M., Clog M., Lawson M., Lloyd M., Piasecki, A., Ponton C., and **Xie H.**

(2018). The isotopic structures of geological organic compounds. *Geological Society, London, Special Publications,* 468(1), 53-81.

**Product literature**

Clumped methane isotope analysis using HR-IRMS. Thermo Fischer Scientific, 2020. Avalable at: https://www.thermofisher.com/order/catalog/product/0723316/0723316

**CONFERENCE PRESENTATIONS (SELECTED)**

**Xie, H.,** Dong, G., Thiagarajan, N., Shuai, Y., Mangenot, X., Formolo, M.J., Lawson, M. and Eiler, J.M., Methane Clumped Isotopologues With High-resolution Gas Source Isotope Ratio Mass Spectrometry. AGUFM (invited talk), 2019, pp.V14B-05.

**Xie, H.,** Ponton, C., Formolo, M.J., Lawson, M., Sessions, A.L. and Eiler, J.M., Position-specific hydrogen isotope distribution in natural propanes: thermal cracking, equilibration and biodegradation. Goldschmidt, 2019.

**Xie, H.,** Dong, G., Formolo, M.J., Lawson, M., and Eiler, J.M., Formation mechanisms of thermogenic methane revealed from 13CH3D and 12CH2D2 measurements. International Clumped Isotope Workshop, 2019.

**Xie, H.,** Formolo, M.J., Lawson, M., Peterson, B.K., Sattler, A., Sessions, A.L. and Eiler, J.M., Hydrogen isotope equilibria in C1-C5 alkanes. Goldschmidt, 2018.

**AWARDS and GRANTS**

Facility Training Grant, Center for Environmental Microbial Interactions (CEMI)
*Caltech* 2018

Cyrus Tang Scholarship For Personal Development and Community Service
*USTC* 2011-2015

Outstanding Student Scholarship
*USTC* 2011-2015