Dr. Eric Deal

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EDUCATION

Ph.D., Geomorphology
University of Grenoble Alpes and GFZ German Research Centre for Geosciences — Feb. 2014 – Mar 2017
Under the direction of Prof. J. Braun

B.Sc., Geophysics
University of British Columbia, Vancouver, Canada — Sep. 2008 – May 2012

WORK EXPERIENCE

Lecturer (Oberassistent) in ERDW at ETH — Nov. 2020 – present
Postdoctoral Researcher in ERDW at ETH — Oct. 2019 – Nov. 2020
Postdoctoral Associate in EAPS at the Massachusetts Institute of Technology — Aug. 2017 – Sep. 2019

GRADUATE SUPERVISION

Doctoral thesis of Karla Vlatković at ETH — Sep. 2022 – present
Masters thesis of Maureen Gretener at ETH — Jun. 2022 – present
Masters thesis of Till Born at ETH — Mar. 2022 – present
Masters project of visiting student Clara Sfez from ENS, Paris — Mar. – Jul. 2022
Masters thesis of Di Deng at ETH — Jun. 2020 – Aug. 2021
Bachelors thesis of Matthew Rushlow at MIT — Jan. 2019 – Jul. 2019

TEACHING

Digital Topography - 3 credit Masters level course at ETH — 2020 – present
Tectonic Geomorphology - 6 credit Masters level course at ETH — 2020 – present

FUNDING

SNF Projects grant for CHF275,000 to support four year field project in Taiwan as well as a PhD Student — 2022 – 2026

PROFESSIONAL & OUTREACH EXPERIENCE

Session Convener at the European Geosciences Union — 2017, 2018, 2020, 2022, 2023
Organizing committee member for the 31st HKT workshop (100 person, 3 day conference) — May 2015 – May 2016

PUBLICATIONS

- [**In review: preprint**] Benavides, S., **Deal, E.,** Venditti, J., S., Bradley, R., Zhang, Q., Kamrin, K., Perron, J.T. *"How fast or how many? Sources of intermittent sediment transport"* Geophysical Research Letters
- **Deal, E.,** Venditti, J., Benavides, S., Bradley, R., Zhang, Q., Kamrin, K., Perron, J.T. *"Grain shape effects in bed load sediment transport"* Nature. **Accepted: preprint**
- **Deal, E.** *"Flow resistance in very rough channels"* Water Resources Research, e2021WR031790. **2022**

- Zhang, Q., **Deal, E.,** Perron, J.T., Venditti, J., Benavides, S., Rushlow, M., Kamrin, K. *"Fluid-driven transport of round sediment particles: from discrete simulations to continuum modeling"* Journal of Geophysical Research: Earth Surface, e2020GL089263. **2022**
- Benavides, S., **Deal, E.,** Rushlow, M., Venditti, J., Zhang, Q., Kamrin, K., Perron, J.T. *"The Impact of Intermittency on Bed Load Sediment Transport"* Geophysical Research Letters 49.5, 10.1029/2021JF006504. **2022**
- **Deal, E.**, and G. Prasicek. *"The Sliding Ice Incision Model: A New Approach to Understanding Glacial Landscape Evolution."* Geophysical Research Letters 48.1, e2020GL089263. **2021**
- Prasicek, G., Hergarten, S., **Deal, E.**, Herman, F. and Robl, J., *"A glacial buzzsaw effect generated by efficient erosion of temperate glaciers in a steady state model."* Earth and Planetary Science Letters 543: 116350. **2020**
- Venditti, J. G., Li, T., **Deal, E.,**, Dingle, E., and Church, M. *"Struggles with stream power: Connecting theory across scales."* Geomorphology: 106817. **2019**
- **Deal, E.**, J. Braun, and G. Botter. *"Understanding the role of rainfall and hydrology in determining fluvial erosion efficiency."* Journal of Geophysical Research: Earth Surface 123.4: 744-778. **2018**
- Herman, F., J. Braun, **E. Deal**, G. Prasicek *"The response time of glacial erosion."* Journal of Geophysical Research: Earth Surface 123.4: 801-817. **2018**
- **Deal, E.**, Favre, A.C. & Braun, J. *"Rainfall variability in the Himalayan orogen and its relevance to longterm erosion rates."* Water Resources Research 53.5: 4004-4021. **2017**

NOTABLE INVITED TALKS

Landscapes Live online seminar **2022**
Departmental seminar, Colorado State University, **2020**
Departmental seminar, Columbia University (Lamont), **2019**
COG3 lecture, MIT **2019**
BiSEPPS Seminar, Harvard **2018**

SELECTED CONFERENCE PRESENTATIONS

- **Deal, E.**, *"A mechanistic understanding of self-formed channel shape and scale"* EGU General Assembly (**2022**)
  Dralle, D., Harman, C.J., **Deal, E.**, Karst, N., Rempe, D., Hahm, W.J. *"Between-catchment variations in recession curves explained by geological diversity"* AGU Fall General Assembly (**2021**)
- **Deal, E.**, *"A simple and effective model for channel width in self-formed channels paves the way from Navier-Stokes to the stream power incision model"* AGU Fall General Assembly (**2021**)
- **Deal, E.**, Zhang, Q., Perron, J. T., Benavides, S., Kamrin, K., Venditti, J., *"A close look at the effect of grain shape on bedload transport"* AGU Fall General Assembly (**2020**)
- **Deal, E.**, Perron, J. T., Venditti, J., Benavides, S., Rushlow, M., Zhang, Q., Kamrin, K., *"Influence of particle shape on bedload transport efficiency."* AGU Fall General Assembly (**2019**)
- **Deal, E.**, Zhang, Q., Perron, J. T., Venditti, J., Kamrin, K., *"Observing the role of grain shape on bedload transport in paired flume experiments and numerical simulations."* American Geophysical Union, Fall Meeting **2018**, abstract EP41B-2650
- **Deal, E.**, Zhang, Q., Venditti, J., Kamrin, K., Perron, J. T., *"Direct comparison of bedload transport in flume experiments and numerical simulations."* 20th EGU General Assembly, EGU, **2018**
- **Deal, E.** & Braun, J. *"Sometimes processes don't matter: the general effect of short term climate variability on erosional systems."* EGU General Assembly 19 (**2017**): EGU 2017-15026-3
- **Deal, E.**, Botter G. & Braun, J. *"Insights into the relationship between climate and landscape: incorporating realistic climate and hydrology into a model of river incision."* AGU Fall General Assembly (**2016**): abstract P32A-07