

**Aaron Bufo, PhD** (he/him)

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**PROFESSIONAL APPOINTMENTS**

From 04.2023: **Professor (Tenure Track)**  
 Ludwig-Maximilians-Universität München, Germany

10.2021 – 03.2023: **Postdoctoral Scholar**  
 GFZ Helmholtz Centre for Geosciences, Potsdam, Germany

10.2019 – 09.2021: **Marie Skłodowska-Curie Postdoctoral Fellow**  
 GFZ Helmholtz Centre for Geosciences, Potsdam, Germany

04.2017 – 10.2019: **Postdoctoral Scholar**  
 GFZ Helmholtz Centre for Geosciences, Potsdam, Germany

09.2013 – 12.2016: **Graduate Student Researcher**  
 Department of Earth Science, University of California, Santa Barbara, USA

06.2015 – 09.2015: **Intern**  
 ConocoPhillips, Houston, Texas, USA

03.2015 – 06.2015: **Instructor**  
 Department of Earth Science, University of California, Santa Barbara, USA

Parental Leave: **Equivalent to 8 months at 100%:**  
 First child: 100% from 01.2023 – 02.2023  
 Second child: 50% from 10.2024 – 09.2025

**EDUCATION**

09.2011 – 03.2017: **PhD, Earth Science**  
**University of California**, Santa Barbara, USA  
 PhD thesis: *Controls on uplift and planation of active structures in the foreland of the Tian Shan*  
 Thesis adviser: Douglas W. Burbank  
 Thesis committee: Bodo Bookhagen (U. Potsdam), Thomas Dunne (UCSB)

10.2007 – 06.2011: **BA & MSci, Natural Sciences (Geology), (First Class)**  
**University of Cambridge**, Cambridge, UK  
*Top of the class* in Geology in 2009 & 2010  
 MSci thesis: *The thermal aureole of the Skaergaard intrusion*  
 Thesis adviser: Marian B. Holness

07.2006: **French Baccalauréat & German Abitur**  
 Lycée International, Saint-Germain-en-Laye, France

**RESEARCH GRANTS AND FELLOWSHIPS (Total: €1,712,294 as PI | €10,000 as Co-PI)**

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- 2024: **European Research Council: Starting Grant (PI)**  
Project: *Floodplain Weathering (FloW)*  
Budget: €1,498,739
- 2021: **German Research Centre for Geosciences: Expedition Fund (Co-PI)**  
Project: *Impact of extreme events on sediment & biogeochemical fluxes*  
Budget: €10,000
- 2019: **European Union: Marie Skłodowska-Curie Individual Fellowship (PI)**  
Project: *Weathering in bedrock landslide deposits (WETSLIDE)*  
Budget: €162,806
- 2015: **Earthscope: Geochronology Award (PI)**  
Project: *Investigating deformation in the wake of the Yellowstone hotspot using markers along the Snake River*  
Budget: \$7,000
- 2014: **Geological Society of America: Graduate Student Research Grant (PI)**  
Additional support for project: *Using physical experiments to study the influence of sediment flux on river – fold interactions in western China*  
Budget: \$1,500
- 2014: **University of California, Santa Barbara, Earth Research Institute: Summer Fellowship (PI)**  
Additional support for project: *Using physical experiments to study the influence of sediment flux on river – fold interactions in western China*  
Budget: \$1,500
- 2013: **University of California, Santa Barbara, Department of Earth Science: Graduate Opportunity Award (PI)**  
Project: *Using physical experiments to study the influence of sediment flux on river – fold interactions in western China*  
Budget: \$4,000
- 2012: **German Academic Exchange Service (DAAD): Doctoral Student Scholarship (PI)**  
Project: *Active deformation in the Pamir-Tian Shan collision zone*  
Budget: €36,749

**Supported Research Grants and fellowships (Total: €242,052 as Host | €135,000 as Co-Host)**

- 2025 **CSC Visiting Fellowship to Prof. Shun Li (Host)**  
Project: *Carbon fluxes of the Yarlung Tsangpo-Brahmaputra Rivers*  
Budget: €17,300
- CSC Fellowship to Xiaobao Gao (Host)**  
Project: *Chemical weathering from mountains to floodplains in the Yarlung Tsangpo-Brahmaputra River basin*  
Budget: €24,300
- 2024: **DAAD PRIME Fellowship to Dr. Albert Cabré (Host)**  
Project: *Frequency-Magnitude relationships of debris flows in the Atacama Desert*  
Budget: €164,152
- CSC Fellowship to Ao Liu (Host)**  
Project: *Oxidative weathering during the Artinskian warming event*  
Budget: €24,300

- 2023: **Swiss Postdoctoral Fellowships to Dr. Yuezhi Zhong (Co-Host)**  
 Project: *Impact of rock uplift on bedrock channel meandering and channel sinuosity*  
 Budget: CHF 131,050
- 2022: **CSC Fellowship to Sen Xu (Host)**  
 Project: *Links between erosion and weathering on the eastern Qinghai-Tibet Plateau*  
 Budget: €9,000

## AWARDS AND HONORS

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- 2024: LMU – Center for Advanced Studies: Membership Young Center
- 2020: German Working Group for Geomorphology: Lecture award
- 2015: University of California, Santa Barbara: Alumni Graduate Award for Research Excellence
- 2013: Lloyd and & Mary Edwards: Field Studies Fellowship
- 2011: University of California, Santa Barbara: Regents Special Fellowship
- 2010: King's College, Cambridge: Scholarship for academic achievements
- 2009: King's College, Cambridge: Scholarship for academic achievements
- 2009: British Petrol: Scholarship for best undergraduate geologic mapping project

## STUDENT SUPERVISION SINCE 2018

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- Postdoc (1)** Albert Cabré (Primary advisor; 2024 – 2025)  
*Frequency-Magnitude relationships of debris flows in the Atacama Desert*
- PhD (2)** Ricardo Mendes Shyu (Co-advisor; 2026 – present)  
*Relating magnetic anisotropy to uplift through modern-day case studies*  
 Hao-Wei Huang (Primary advisor; 2025 – present)  
*Sediment transport and weathering in the Madeira catchment*
- Visit. PhD (3)** Xiaobao Gao. Tongji University, Shanghai, China (Co-advisor; 2026 – present)  
*Chemical weathering in the Yarlung Tsangpo-Brahmaputra River basin*  
 Ao Liu. CUG, Wuhan, China (Co-advisor; 2025 – present)  
*Oxidative weathering during the Artinskian warming event*  
 Sen Xu. Tianjin University, China. (Co-advisor; 2022)  
*Links between erosion and weathering on the eastern Qinghai-Tibet Plateau*
- Master (4)** Kaja Schultz (Primary advisor; 2024 – 2025)  
*Weathering fluxes under moderate erosion rates – the case of the Black Forest, Germany*  
 Monika Pfau (Primary advisor; 2022 – 2024)  
*Mobilisierung von organischem Kohlenstoff durch die Jahrhundertflut 2021 im Ahrtal*  
 Alexander Gessner (Primary advisor; 2020 – 2024)  
*Quantifying timescales of organic matter build-up in landslide deposits: Insights from the Southern Alps of New Zealand*  
 Theresa Binder (Primary advisor; 2018 – 2019)  
*Timescales of carbonate and silicate weathering in morainal hillslopes*
- Bachelor (4)** Soraya Neubauer (Primary advisor; present)  
*Sedimentverfolgung in Rinnenexperimenten*  
 Vincent Müller (Primary advisor; 2025 – 2026)  
*Verwitterung im Schwarzwald*

Sophie Aichner (Primary advisor; 2025)

*Wechselwirkung zwischen Bodenbildung und dem Mikrobiom in Gletschervorfeldern*

Marcel Schwörer (Primary advisor; 2024)

*Geology of anticlinal structures in the Oberstdorf region using the example of the Burgberg (Helvetikum)*

## TEACHING

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- Since 2023: **As professor** at LMU München (**9h per semester; 6h from 2025 – present**)  
 Bachelor: Karten und Profile; Sedimentgeologische Profilaufnahme; Einführende und weiterführende Geländeübungen, Exogene Dynamik, Kartierübung Kreta, Tektonische Geomorphologie und Sedimentologie  
 Master & PhD: Advanced Earth Surface Dynamics, Post-graduate seminar
- 2018 – 2022: **As guest lecturer** at FU Berlin, Univ. of Potsdam, TU Munich (**34h**)  
 Bachelor: Allgemeine Physische Geographie, Earth System Science, Exogene Dynamik, Sedimentology  
 Master: A Systems Approach to Earth Sciences, Sedimentary Systems: From source to sink
- 2012 – 2015: **As graduate lecturer & teaching assistant.** UC Santa Barbara (**120h**)  
 Bachelor: Geological Application of GIS, Geological Catastrophes, Structural Geology

## SYNERGISTIC ACTIVITIES AND SERVICE

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- Since 2023: **PhD committee member.** (Total 15, Chair 2)
- Since 2017: **Paper and proposal reviews** (113 reviews of 73 individual documents).  
 Agence Nationale de la Recherche (ANR), Alexander von Humboldt Foundation; American Journal of Science (AJS); Applied Geochemistry; Catena; Chemical Geology; Earth and Planetary Science Letters (EPSL); Earth-Science Reviews; Earth Surface Dynamics (Esurf); Earth Surface Processes and Landforms (ESPL); Elements; Environmental Science and Technology (ES&T) Geochimica et Cosmochimica Acta (GCA); Geology; Geomorphology; Geophysical Research Letters (GRL); Geosciences; Geoscientific Model Development (GMD); GSA Bulletin (GSAB); Global and Planetary Change (GPC); JGR: Biogeosciences; JGR: Earth Surface; JGR: Solid Earth; Journal of Hydrology; Lithosphere; National Science Centre Poland; National Science Foundation (NSF); Nature; Nature Communications; Nature Geoscience; Science Advances; Sedimentology; Tectonics; Tectonophysics
- Since 2017: **Session (co-)convener at conferences** (Total 10)  
 American Geophysical Union (AGU): 2017  
 European Geosciences Union (EGU): 2018 – 22  
 German Geological Society (DGGV): 2023  
 German Society of Geomorphology (DGGM): 2021  
 Goldschmidt: 2023, 2026
- 2019 – 2022: **Co-founder, network for climate action.** Employee initiative and network for climate action across all research centres within the Helmholtz Association
- 2019 – 2022: **Co-organizer, lecture series.** Earth Surface Dynamics distinguished lecture series across sections of the German Research Centre of Geosciences
- 2018 – 2019: **Co-organizer, seminar.** German Research Centre of Geosciences
- 2014: **Graduate student representative.** University of California, Santa Barbara
- 2013: **Co-organizer, graduate alumni career panel.** University of California, Santa Barbara

- 2012 – 2013: **Co-organizer, department seminar.** University of California, Santa Barbara  
 2008 – 2009: **Teaching committee member.** Department of Earth Sciences, University of Cambridge

#### INVITED FIRST AUTHOR TALKS

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- 2026: **Outreach Seminar.** Freundeskreises der Geologischen Staatssammlung München  
*Die Rolle der Gesteinsverwitterung im Kohlenstoffkreislauf der Erde*
- 2025: **International keynote talk.** Steepest Descent (EGU), Vienna, Austria  
*The sensitivity of the carbon cycle to mountain building*  
**Department Seminar.** China University of Geosciences, Wuhan, China  
*The sensitivity of the inorganic carbon cycle to erosion: Constraints from active mountain ranges*
- 2024: **Society seminar.** German Sedimentology Lunch, Germany  
*The sensitivity of the inorganic carbon cycle to erosion: Constraints from active mountain ranges*  
**Research group seminar.** Tongji University, China  
*The sensitivity of the inorganic carbon cycle to erosion: Constraints from active mountain ranges*  
**Research group seminar.** Technical University of Munich, Germany  
*The sensitivity of the inorganic carbon cycle to erosion: Constraints from active mountain ranges*  
**Research group seminar.** ETH Zurich, Switzerland  
*The sensitivity of the inorganic carbon cycle to erosion: Constraints from active mountain ranges*
- 2023: **Department Seminar.** University of Kiel, Germany  
*The sensitivity of the inorganic carbon cycle to erosion: Constraints from active mountain ranges*  
**Department Seminar.** University of California, Santa Barbara, USA  
*Non-linear impacts of erosion on the inorganic carbon cycle: Constraints from active mountain ranges*
- 2022: **International conference talk.** Goldschmidt, Hawaii, USA  
*Erosion and chemical weathering of siliceous rocks at the supply and kinetic limits*  
**Research group seminar.** University of Oxford, UK  
*The impact of erosion on the inorganic carbon cycle: Constraints from active mountain ranges*  
**Job Interview seminar.** University of Salzburg, Austria  
*Of Sediments and Solutes – Linking Weathering and Erosion across Earth's Surface*  
**Department seminar.** Colorado State University, USA  
*The impact of erosion on the inorganic carbon cycle: Constraints from silicate, carbonate, and sulfide weathering in southern Taiwan*  
**Department seminar.** University of Potsdam, Germany  
*The impact of erosion on the inorganic carbon cycle: Constraints from silicate, carbonate, and sulfide weathering in southern Taiwan*  
**Job Interview seminar.** Ludwig Maximilian University of Munich, Germany  
*Of Sediments and Solutes – Linking Weathering and Erosion across Earth's Surface*
- 2021: **Society seminar.** Munich GeoCenter  
*Impact of erosion on chemical weathering and the carbon cycle: Constraints from southern Taiwan*  
**Research group seminar.** University of Cambridge, UK  
*The impact of erosion on the co-variation of silicate, carbonate, and sulfide weathering*  
**Job Interview seminar.** University of Oxford, UK  
*Of Sediments and Solutes – Linking Weathering and Erosion across Earth's Surface*  
**Society seminar.** German Working Group for Geomorphology  
*Chemical Signatures of Landscapes*

- 2020: **Research group seminar.** Victoria University of Wellington, New Zealand  
*Erosion-driven CO<sub>2</sub> emission due to coupled silicate, carbonate and sulfide weathering*
- 2019: **International conference talk.** European Geosciences Union, Vienna, Austria  
*Temporal changes in rock uplift rates of folds in the foreland of the Tian Shan and the Pamir from geodetic and geologic data*
- 2018: **Department seminar.** Free University of Berlin, Germany  
*Controls on channel migration and the lateral erosion by rivers*  
**Research group seminar.** University of Salzburg, Austria  
*Links between channel migration, landsliding, and chemical weathering*  
**Research group seminar.** Petrographic and Geochemical Research Centre, Nancy, France  
*Controls on the lateral erosion by rivers*  
**Research group seminar.** Swiss Federal Institute of Technology (ETH), Zurich, Switzerland  
*Controls on the lateral erosion by rivers*
- 2016: **Research group seminar.** University of California, Los Angeles, USA  
*Rates and mechanics of fold uplift and lateral bedrock planation in a convergent foreland basin*  
**Research group seminar.** California Institute of Technology (Caltech), Pasadena, USA  
*Fluvial planation of actively uplifting anticlines*  
**Research group seminar.** University of Potsdam, Germany  
*Climatically controlled erosion of actively uplifting anticlines – evidence from physical experiments and field data*  
**Research group seminar.** German Research Centre for Geosciences, Potsdam, Germany  
*Climatically controlled erosion of actively uplifting anticlines – evidence from physical experiments and field data.*

**PEER REVIEWED ARTICLES**

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Summary Metrics (17.06.2026)**Peer-reviewed papers:** N = 27 | 1 Science | 1 Nature | 3 Nat. Geosci.**Citations:** Google h = 15, N = 1026 | Scopus h = 15, N = 831 | Clarivate h = 15, N = 750**Clarivate citation impact:** Citation percentile median 83<sup>rd</sup> percentile | 2 highly cited papers2026

- [27] Zhang, L.<sup>§</sup>, **Bufo, A.**<sup>§</sup>, Dean, J.F., Rocher-Ros, G., Sponseller, R.A., Stanley, E.H., Karlsson, J., Butman, D.E., Liu, R., Hou, L., Ding, J., Piao, S., Xia, X., Battin, T.J. (2026). *Rock weathering can counteract river CO<sub>2</sub> emissions induced by permafrost thaw*. **Nature**

<sup>§</sup> **L.Z. and A.B. contributed equally to this work.**

- [26] Greinwald, K., **Bufo, A.**, Blume, T., Demand, D., Egli, M., Gebauer, T., Hartmann, A., Maier, F., van Meerveld, I., Musso, A., Scherer-Lorenzen, M., Weiler, M. (2026). *Co-development of physical and biological variables on glacial hillslopes over millennia*. **Earth and Planetary Science Letters**, 688, 120100

2025

- [25] Dellefant, F., Sleptsova, I. V., **Bufo, A.**, Kaliwoda, M. (2025). *Petrography and Geochemistry of Feldspathic Angkorean Arenites Are Linked to Magnetic Susceptibility and Suggest Different Igneous Sources*. **Geoarchaeology**, 40(6), e70034
- [24] Xu, S., **Bufo, A.**, Kemeny, P.C., Klaus, M., Zhong, J., Ma, T., Li, D., Li S.L., (2025). *Climate warming and strengthened hydrologic cycle accelerate CO<sub>2</sub> release from rock weathering*. **Geochimica et Cosmochimica Acta**, 407, 174-192
- [23] Dosch, S., Hovius, N., **Bufo, A.**, Repasch, M., Scheingross, J., Vieth-Hillebrand, A., Sachse, D. (2025). *CO<sub>2</sub> Fluxes Driven by Floodplain Morphology and Seasonality at the Rio Bermejo, Argentina*. **Journal of Geophysical Research: Biogeosciences**, 130(8), e2024JG008517
- [22] Turowski, J.M., McNab, F., **Bufo, A.**, Tofelde, S. (2025). *Width evolution of channel belts as a random walk*. **Earth Surface Dynamics**, 13(1), 97-117

2024

- [21] Erlanger, E., **Bufo, A.**, Paris, G., D'Angeli, I., Pisani, L., Kemeny, P.C., Stammeier, J., Haghipour, N., Hovius, N. (2024). *Deep CO<sub>2</sub> release and the carbon budget of the central Apennines modulated by geodynamics*. **Nature Geoscience**, 17(5), 465-471
- [20] Xu, S., Li S-L., **Bufo, A.**, Zhong, J., Wen, H., Chen, S., Li, L. (2024). *Escalating Carbon Export from High-Elevation Rivers in a Warming Climate*. **Environmental Science & Technology**, 58(16), 7032-7044.
- [19] Turowski, J.M., **Bufo, A.**, Tofelde, S. (2024). *A process-based model for fluvial valley width*. **Earth Surface Dynamics**, 12(2), 493-514
- [18] **Bufo, A.**, Rugenstein, J.K.C., Hovius, N. (2024). *CO<sub>2</sub> drawdown from weathering is maximized at moderate erosion rates*. **Science**, 383(6687), 1075-1080
- [17] Xu, S., **Bufo, A.**, Li S.L., Erlanger, E.D., Ran, L., Zhong, J., Yang, C.J., Zhang, L., Ma, T., Sachse, D. (2024). *Erosional modulation of the balance between alkalinity and acid generation from rock weathering*. **Geochimica et Cosmochimica Acta**, 368, 126-146

2023

- [16] Roda-Boluda, D.C., Schildgen, T.F., Wittmann, H., Tofelde, S., **Bufo, A.**, Prancevic, J., Hovius, N. (in press). *Elevation-Dependent Periglacial and Paraglacial Processes Modulate Tectonically-Controlled*

*Erosion of the Western Southern Alps, New Zealand. Journal of Geophysical Research: Earth Surface*, 128(11), e2023JF007271

## 2022

- [15] Tofelde, S., **Bufo, A.**, Turowski, J.M. (2022). *Hillslope Sediment Supply Limits Alluvial Valley Width. AGU Advances*, 3, e2021AV000641
- [14] **Bufo, A.**, Cook, K.L., Galy, A., Wittmann, H., Hovius, N. (2022). *The effect of lithology on the relationship between denudation rate and chemical weathering pathways – evidence from the eastern Tibetan Plateau. Earth Surface Dynamics*, 10(3), 513-530
- [13] Tuzlak, K., Pederson, J.L., **Bufo, A.**, Rittenour, T.M. (2022). *Patterns of incision and deformation on the southern flank of the Yellowstone hotspot from terraces and topography. Geological Society of America Bulletin*, 134(5-6), 1319-1333

## 2021

- [12] Erlanger E.D., Rugenstein, J.K.C., **Bufo A.**, Picotti V., Willett, S.D. (2021). *Controls on Physical and Chemical Denudation in a Mixed Carbonate-Siliciclastic Orogen. Journal of Geophysical Research: Earth Surface*. 126(8), e2021JF006064
- [11] **Bufo, A.**, Hovius, N., Emberson, R., Rugenstein, J.K.C., Galy, A., Hassenruck-Gudipati, H., Chang, J-M. (2021). *Co-variation of silicate, carbonate and sulfide weathering drives CO<sub>2</sub> release with erosion. Nature Geoscience*, 14(4), 211-216

## 2020

- [10] Savi, S., Tofelde, S., Wickert A.W., **Bufo, A.**, Schildgen, T.F., Strecker, M.R. (2020). *Interactions between channels and tributary alluvial fans: channel adjustments and sediment-signal propagation. Earth Surface Dynamics*, 8(2), 303-322

## 2019

- [9] Hoffmann, J., **Bufo, A.**, Caers J. (2019). *Morphodynamic Analysis and Statistical Synthesis of Geomorphic Data: Application to a Flume Experiment. Journal of Geophysical Research: Earth Surface*, 124(11), 2561-2578
- [8] **Bufo, A.**, Turowski, J.M., Burbank, D.W., Paola, C., Wickert, A.D., Tofelde, S. (2019). *Controls on the lateral migration rate of braided channel systems in coarse non-cohesive sediment. Earth Surface Processes and Landforms*, 44(14), 2823-2836
- [7] Tofelde, S., Savi, S., Wickert A.W., **Bufo, A.**, Schildgen, T.F. (2019) *Alluvial channel response to environmental perturbations: Fill-terrace formation and sediment-signal disruption. Earth Surface Dynamics*, 7(2), 609-631

## 2017

- [6] **Bufo, A.**, Burbank, D.W., Liu, L., Bookhagen, B., Chen, J., Qin, J., Li, T., Thompson Jobe, J.A., Yang, H. (2017). *Variations of Lateral Bedrock Erosion Rates Control Planation of Uplifting Folds in the Foreland of the Tian Shan, NW China. Journal of Geophysical Research: Earth Surface*, 122(12), 2431-2467
- [5] Thompson Jobe, J.A., Li, T., Chen, J., Burbank, D.W., **Bufo, A.** (2017). *Quaternary Tectonic Evolution of the Pamir-Tian Shan Collision Convergence Zone, Northwest China. Tectonics*, 36(12), 1944-19194
- [4] **Bufo, A.**, Bekaert, D., Hussain, E., Bookhagen, B., Burbank, D.W., Thompson, J.A., Chen, J., Li, T., Langtao, L., Gan, W. (2017). *Temporal changes in rock uplift rates of folds in the foreland of the Tian Shan and the Pamir from geodetic and geologic data. Geophysical Research Letters*, 44(21), 10977-10987

## 2016

- [3] **Bufo, A.**, Paola, C., Burbank, D.W. (2016). *Fluvial bevelling of topography controlled by lateral channel mobility and uplift rate. Nature Geoscience*, 9(9), 706-710

- [2] Topal, S., Keller, E., **Bufo, A.**, Koçyiğit, A. (2016). *Tectonic geomorphology of a large normal fault: Akşehir fault, SW Turkey*. **Geomorphology**, 259, 55-69

2014

- [1] **Bufo, N. A.**, Holness, M. B., Humphreys, M.C.S. (2014). *Contact Metamorphism of Precambrian Gneiss by the Skaergaard Intrusion*. **Journal of Petrology**, 55, 1595-1617

## **OTHER PUBLICATIONS**

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**Bufo, A.**, von Blanckenburg, F. (2023), *Wasser als Regulator des Erdklimas*. **System Erde**, 13(1), 18-23

**Bufo, A.**, Hovius, N., Emberson, R., Rugenstein, J.K.C., Galy, A., Hassenruck-Gudipati, H., Chang, J.-M. (2021). *Major element stream water chemistry, compiled 10Be erosion rates, and analyses of weathering across an erosion-rate gradient in southern Taiwan*. **GFZ Data Services**. Dataset

**Bufo, N. A.** (2017). *Rates and mechanics of fold uplift and lateral bedrock planation in convergent foreland basins*. **University of California, Santa Barbara**. PhD Thesis

**Bufo, A.**, Paola, C. & Burbank, D.W. (2016). *Fold Erosion by an Antecedent River*. **SEAD**. Dataset

## **CONFERENCE PROCEEDINGS**

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2026

Huang, H., Hovius, N., You, C., Emberson, R., Andermann, C., Erlanger, E., **Bufo, A.** (2026). *Efficient and uniform mobilization of solutes during high-discharge events*. Goldschmidt. Montréal, Canada

**Bufo, A.**, Zhang, L., Dean, J.F., Rocher-Ros, G., Sponseller, R.A., Stanley, E.H., Karlsson, J., Butman, D.E., Liu, R., Hou, L., Ding, J., Piao, S., Xia, X., Battin T.J. (2026). *Impacts of warming and permafrost thaw on chemical weathering and riverine carbon fluxes on the Qinghai-Tibet Plateau*. Goldschmidt. Montréal, Canada

Muñoz, E., Andò, S., Garzanti, E., **Bufo, A.**, Gosetti, F., Ballabio, D., Resentini, A., Hovius, N. (2026). *Persistence of pyrite in mountain river sediments sourced by landsliding in southeastern Taiwan*. EGU General Assembly. Vienna, Austria

2025

Zhong, Y., Turowski, J.M., **Bufo, A.**, Schildgen, T. (2025). *Impact of rock uplift on bedrock-valley width and channel sinuosity*. EGU General Assembly. Vienna, Austria

Cabré, A., Mather, A., **Bufo, A.**, Lang, A. (2025). *Interactions between aeolian dune fields and debris flows in alluvial fans*. EGU General Assembly. Vienna, Austria

Turowski, J.M., McNab, F., **Bufo, A.**, Tofelde, S., Zhong, Y. (2025). *A random walk perspective on channel belts and fluvial valleys: model and evidence*. EGU General Assembly. Vienna, Austria

**Bufo, A.**, Zhang, L., Dean, J.F., Rocher-Ros, G., Stanley, E.H., Sponseller, R.A., Butman, D.E., Karlsson, J., Liu, R., Battin T.J. (2025). *Impacts of warming and permafrost thaw on chemical weathering and riverine carbon fluxes on the Qinghai-Tibet Plateau*. EGU General Assembly. Vienna, Austria

**Bufo, A.**, Zhang, L., Dean, J.F., Rocher-Ros, G., Stanley, E.H., Sponseller, R.A., Butman, D.E., Karlsson, J., Liu, R., Battin T.J. (2025). *Impacts of warming and permafrost thaw on chemical weathering and riverine carbon fluxes on the Qinghai-Tibet Plateau*. GSA Special Conference. London, United Kingdom

2024

- Schultz, K., **Bufo, A.** (2024). *Weathering fluxes under moderate erosion rates – the case of the Black Forest, Germany*. Pangeo. Salzburg, Austria
- Bufo, A.**, Rugenstein, J.K.C., Hovius, N. (2024). *Non-linear sensitivity of mineral weathering to erosion implies an optimum of CO<sub>2</sub> drawdown at moderate erosion rates*. EGU General Assembly. Vienna, Austria
- Turowski, J.M., McNab, F., **Bufo, A.**, Tofelde, S. (2024). *Evolution of channel belts, flood plains and fluvial valleys*. EGU General Assembly. Vienna, Austria
- Roda-Boluda, D.C., Schildgen, T.F., Lupker, M., **Bufo, A.**, Sondergaard, A.S., Haghipour, N., Prancevic, J., Tofelde, S., Wittmann, H., Hovius, N. (2024). *Quantifying landslide erosion rates over millennial timescales in the Southern Alps and Fiordland, New Zealand*. EGU General Assembly. Vienna, Austria
- Chang, J-M., Wu, I-F., Lin, L-H., **Bufo, A.**, Wang, P-L., Chou, H-L., Hsieh, T-C. (2024). *Microbial Pyrite Oxidation and Chemical Weathering to a Typhoon Precipitation and Discharge Event in Taiwan*. EGU General Assembly. Vienna, Austria

### 2023

- Bufo, A.**, Rugenstein, J.K.C., Hovius, N. (2023). *Non-linear sensitivity of mineral weathering to erosion implies an optimum of CO<sub>2</sub> drawdown at moderate erosion rates*. DGGV Annual Meeting. Berlin, Germany
- Turowski, J.M., **Bufo, A.**, Tofelde, S. (2023). *A process-based model for fluvial valley width*. DGGV Annual Meeting. Berlin, Germany
- Bufo, A.**, Rugenstein, J.K.C., Hovius, N. (2023). *Non-linear sensitivity of mineral weathering to erosion implies an optimum of CO<sub>2</sub> drawdown at moderate erosion rates*. Goldschmidt. Lyon, France
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- Erlanger, E., **Bufo, A.**, Paris, G., D'Angeli, I., Pisani, L., Stammeier, J., Haghipour, N., Hovius N. (2022). *Metamorphic CO<sub>2</sub> emissions outpace CO<sub>2</sub> drawdown from silicate weathering in a young carbonate mountain belt*. GSA Connects. Denver, Colorado, USA

- Dosch, S., Hovius, N., Repasch, M.N., Vieth-Hillebrand, A., **Bufo, A.**, Sachse, D. (2021). *Carbon storage, transfer and outgassing driven by floodplain morphology and seasonality at the Rio Bermejo, Argentina*. Goldschmidt. Hawaii, USA
- Bufo, A.**, Hovius, N., Caves Rugenstein, J.K. (2021). *Erosion and chemical weathering of siliceous rocks at the supply and kinetic limits*. Goldschmidt. Hawaii, USA
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- Bufo, A.**, Hovius, N., Emberson, R., Caves Rugenstein, J.K., Galy, A., Hassenruck-Gudipati, H., Chang, J-M. (2021). *Coupled limits to silicate, carbonate, and sulfide weathering in metasediments drives release of CO<sub>2</sub> with erosion: Constraints from southern Taiwan*. EGU General Assembly. Virtual
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- Cook, K.L., **Bufo, A.**, Galy, A., Wittmann, H., Hovius, N. (2020). *The effect of lithology on the relationship between erosion rate and chemical weathering pathways*. AGU Fall Meeting Abstracts. Virtual
- Roda-Boluda, D.C., Schildgen, T.F., Wittmann, H., Tofelde, S., Prancevic, J., **Bufo, A.**, Hovius, N. (2020). *Rates and Controls of Erosion on the Western Southern Alps of New Zealand over 10<sup>2</sup> yr timescales*. AGU Fall Meeting Abstracts. Virtual
- Roda-Boluda, D.C., Schildgen, T.F., Lupker, M., Wittmann, H., Prancevic, J., Tofelde, S., **Bufo, A.**, Hovius, N. (2020). *Quantifying landslide recurrence intervals and tracing landslide-derived sediment with in-situ <sup>10</sup>Be and <sup>14</sup>C*. AGU Fall Meeting Abstracts. Virtual
- Bufo, A.**, Hovius, N., Emberson, R., Caves Rugenstein, J.K., Galy, A., Hassenruck-Gudipati, H., Chang, J-M. (2020). *Coupled limits to silicate, carbonate, and sulfide weathering in metasediments drives*

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- Bufo, A.**, Turowski, J.M., Burbank, D.W., Paola, C., Wickert, A.D., Tofelde, S. (2020). *Controls on the lateral channel migration rate of braided alluvial channel systems*. EGU General Assembly. Virtual
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- Prancevic, J.P., Roda-Boluda, D., Tofelde, S., **Bufo, A.** (2019). *Comparing hillslope sediment supply with river sediment in a threshold landscape*. AGU Fall Meeting Abstracts. San Francisco, CA, USA
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- Tofelde, S., Savi, S., Wickert, A.D., **Bufo, A.**, Schildgen, T. (2019). *Fill-terrace formation and sediment signal disruption in response to environmental perturbations*. GSA Penrose Conference: Clast 2019. Juneau, AK, USA
- Chang, J-M., Lin, L-H., Hovius, N., **Bufo, A.**, Chou, H-L., Wang, P-L., Chen, H., Andermann, C. (2019). *The Impact of Typhoon Precipitation on Flow Routing, River Chemistry and Carbon Cycling*. Goldschmidt. Barcelona, Spain
- Bufo, A.**, Burbank, D.W., Bookhagen, B., Thompson Jobe, J.A., Bekaert, D.P.S., Hussain, E., Chen, J., Li, T. (2019). *Temporal changes in rock uplift rates of folds in the foreland of the Tian Shan and the Pamir from geodetic and geologic data*. EGU General Assembly. Vienna, Austria
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- Hoffmann Mendes, J., **Bufo, A.**, Caers, J. (2019). *Morphodynamic Analysis and Statistical Synthesis of Geomorphic Data*. EGU General Assembly. Vienna, Austria

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- Bufo, A.**, Emberson, R., Hovius, N., Caves-Rugenstein, J.K., Hassenruck-Gudipati, H. (2018). *The impact of soil and landslide erosion processes on carbonate and silicate weathering in southern Taiwan*. Central European Conference on Geomorphology and Quaternary Sciences. Gießen, Germany
- Bufo, A.**, Emberson, R., Hovius, N., Caves-Rugenstein, J.K., Hassenruck-Gudipati, H. (2018). *Impact of soil and landslide erosion processes on coupled sulfide oxidation and carbonate weathering*. Goldschmidt. Boston, USA
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- Bufo A.**, Pederson J., Tuzlack D. (2017). *Geomorphic evidence for Quaternary tectonics on the southern flank of the Yellowstone hotspots from terraces and stream profiles along the Hoback and Snake River*. EGU General Assembly. Vienna, Austria

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- Bufo, A.**, Bookhagen, B., Bekaert, D., Hussain, E., Burbank, D. W. (2016). *Rapid deformation in the foreland of the Pamir and Tian Shan, western China, revealed by Envisat-ASAR radar interferometry*. TerraSAR-X / TanDEM-X Science Team Meeting. Oberpfaffenhofen, Germany
- Bufo A.**, Pederson J., Tuzlack D. (2016). *Quaternary tectonics along the flanks of Yellowstone from terraces along the Hoback and Snake River*. GSA Annual Meeting. Denver, CO, USA
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