BODO BOOKHAGEN CURRICULUM VITAE

Institut für Erd- und Umweltwissenschaften, Universität Potsdam, Karl-Liebknecht-Str. 24-25, 14467 Potsdam, Germany, bodo@geo.uni-potsdam.de

Affiliated with Geography Department, UC Santa Barbara, Ellison Hall 1832, Santa Barbara, CA 93106

Professional Preparation

Potsdam University, Germany: Computer Science and Geophysics, Vordiplom 1997

Potsdam University, Germany: Geology, Diploma 2000

Potsdam University, Germany: Geology, PhD (Dr. rer. nat., summa cum laude), 2005

Appointments

2017	Varahamihira Ministry of Science Chari Professor at Indian
	Technology Institute (IIT) Gandhinagar (Visiting Professor)
Since Aug. 2014	Chair of Geological Remote Sensing, Full Professor, Inst. for
	Earth- and Environmental Science, U Potsdam
Since Aug. 2014	Affiliated Assoc. Professor, Geography Dept., UC Santa Barbara
2011 – 2014	Assoc. Professor, Geography Dept., UC Santa Barbara
2008 – 2011	Asst. Professor, Geography Dept., UC Santa Barbara
since Feb. 2008	Affiliated Faculty, Dept. of Earth Sciences, UC Santa Barbara
Jan. 2006 – Dec. 2007	Postdoctoral researcher, GES, Stanford University
Jan. 2005 – Feb. 2006	Assistant Researcher, Institute for Crustal Studies, UC Santa
	Barbara
Oct. 2001 – Jul. 2002	DAAD Stipend at the University of California, Berkeley
Mar. 1996 – May 2001	Computer coder at a private computer company in Berlin,
•	Germany

Research Interests

Understanding Late Quaternary climate change, geomorphic processes, landscape evolution, and tectonic processes through integrated studies involving cosmogenic radionuclide dating (He, Ne, Be, Al, Cl), recent and past climatic records, remote sensing, numerical modeling, and field observations. Spatial scales range from hillslopes (10⁰ km²) to entire mountain ranges (~10³ km). For smaller scale analysis, I am using a terrestrial laser scanner (lidar) to create high resolution, cm-scale digital elevation models for erosion-process deciphering.

Scientific Research Projects

Quaternary Climate Change and Landsliding: Northwest Argentine Andes, Puna Plateau, NW Himalaya, and Southern California

Coastal Active Tectonics: South-central Chile, southern and central California

Exposure-Age Dating (CRN): NW Himalaya, Northwest Argentine Andes, south-central Chile, southeast Kyrgyzstan (Tien Shan), California

Landscape Evolution: Southeast Kyrgyzstan, Kyrgyz Range, NW Himalaya, south-central Chile, Sana Cruz Island and coastal California

Computational Experiences: Development of high-resolution algorithms for the NASA TRMM Satellite, numerical landscape-evolution modeling, Hydrological Modeling of Lake-Level Changes, thermo-kinematic modeling of landscape evolution on long timescales (>10⁵ y), quantification and forward modeling of geomorphic processes, development of processing algorithms for terrestrial lidar data

Peer-reviewed book chapter

- 6. **Bookhagen, B.** (2017): Hydrology and glaciology of the Himalayas: their influence on wetlands, in *Bird Migration Across the Himalayas: wetland functioning amidst mountains and glaciers*, H. Prins and T. Namgail (editors), Cambridge University Press
- 5. **Bookhagen, B.** (2016): Glaciers and Monsoon Systems, in *The Monsoons and Climate Change, L.M.V. Carvalho and C. Jones (editors), 253 pp.* Springer Verlag, Berlin.

- 4. Boers, N., Rheinwalt, A., **Bookhagen, B.**, Marwan, N. and Kurths, J. (2015): A Complex Network Approach to Investigate the Spatiotemporal Co-variability of Extreme Rainfall, in *Machine Learning and Data Mining Approaches to Climate Science*, V. Lakshmanan et al. (eds.), Springer Verlag, doi:10.1007/978-3-319-17220-0_15
- 3. Strecker, M.R., Hilley, G.E., **Bookhagen, B.**, and Sobel, E.R. (2011): Structural, geomorphic and depositional characteristics of contiguous and broken foreland basins: examples from the eastern flanks of the central Andes in Bolivia and NW Argentina, in *Recent Advances in Tectonics of Sedimentary Basins, C. Busby and A. Azor (editors*)
- 2. **Bookhagen, B.** and Strecker, M.R. (2010): Modern Andean rainfall variation during ENSO cycles and its impact on the Amazon Basin, in *Neogene history of Western Amazonia and its significance for modern diversity*, C. Hoorn, H. Vonhof, F. Wesselingh (editors), Blackwell Publishing, Oxford
- Alonso, R.N., Bookhagen, B., Carrapa, B., Coutand, I., Haschke, M., Hilley, G.E., Schoenbohm, L. Sobel, E. R., Strecker, M.R., Trauth, M.H., Villanueva, A. (2006): Tectonics, Climate, and Landscape Evolution of the Southern Central Andes: The Argentine Puna Plateau and adjacent Regions between 22 and 30° S lat, in *Frontiers in Earth Sciences*, O. Oncken, M. Strecker, G. Franz, V. Ramos (editors), Springer Verlag, Berlin

Peer-reviewed publications

- Purinton, B. and **Bookhagen, B.**: Measuring Decadal Vertical Land-level Changes from SRTM-C (2000) and TanDEM-X (~2015) in the South-Central Andes, *Earth Surf. Dynam. Discuss.*, https://doi.org/10.5194/esurf-2018-51, in review, 2018.
- 109. Olen, S. and **Bookhagen, B.** (2018): Mapping Damage-Affected Areas after Natural Hazard Events Using Sentinel-1 Coherence Time Series, *Remote Sensing*, doi: 10.3390/rs10081272
- 108. Luna, L.V., **Bookhagen, B.**, Niedermann, S., Rugel, G., Scharf, A., Merchel, S. (2018): Glacial chronology and production rate cross-calibration of five cosmogenic nuclide and mineral systems from the southern Central Andean Plateau, *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2018.07.034
- 107. Grujic, D., Govin, G., Barrier, L., **Bookhagen, B.**, Coutand, I., Cowan, B., Hren, M. T. and Najman, Y. (2018): Formation of a Rain Shadow: O and H Stable Isotope Records in Authigenic Clays From the Siwalik Group in Eastern Bhutan. *Geochem. Geophys. Geosyst.*, doi:10.1029/2017GC007254
- 106. Nennewitz, M., Thiede, R.C., and **Bookhagen, B.** (2018): Fault activity, tectonic segmentation, and deformation pattern of the western Himalaya on Ma timescales inferred from landscape morphology, *Lithosphere*, doi: 10.1130/L681.1
- 105. Smith, T.T. and **Bookhagen, B.** (2018): Changes in seasonal snow-water equivalent distribution in High Mountain Asia, 1987-2009, *Sci. Adv.* 2018,
- 104. Bufe, A., D. W. Burbank, L. Langtao, **B. Bookhagen**, Q. Jintang, C. Jie, L.Tao, J. A. Thompson Jobe, T. Jobe, Y. Huili (2017): Variations of lateral bedrock erosion rates control planatation of uplifting folds in the foreland of the Tian Shan, NW China, *JGR Earth Surface*, doi: 10.1002/2016JF004099
- 103. Smith, T.T., Bookhagen, B., Reinwalt, A. (2017): Spatio-temporal Patterns of High Mountain Asia's Snowmelt Season Identified with an Automated Snowmelt Detection Algorithm, 1987-2016, *The Cryosphere*, doi:10.5194/tc-2017-67
- 102. Neely, A., Bookhagen B., Burbank, D.W. (2017): An automated knickzone selection algorithm (KZ-Picker) to analyze transient landscapes: Calibration and validation, *JGR Earth Surface*, doi:10.1002/2017JF004250
- 101. Huss, M., **Bookhagen, B.**, Huggel, C., Jacobsen, D., Bradley, R., Clague, J., Vuille, M., Buytaert, W., Cayan, D., Greenwood, G., Mark, B., Milner, A., Weingartner, R., and Winder,

- M. (2017): Towards mountains without permanent snow and ice, Earth's Future, doi:10.1002/2016EF000514
- 100. Purinton, B. and Bookhagen, B. (2017): Validation of digital elevation models (DEMs) and comparison of geomorphic metrics on the southern Central Andean Plateau, Earth Surf. Dynam., 5, 211-237, doi: 10.5194/esurf-5-211-2017
- 99. Tofelde, S., Taylor F. Schildgen, T.F., Savi, S., Pingel, H., Wickert, A.D., **Bookhagen, B.**, Wittmann, H., Alonso, R., Cottle, J., Strecker, M.R. (2017): 100 kyr fluvial cut-and-fill terrace cycles since the Middle Pleistocene in the southern Central Andes, NW Argentina, *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2017.06.001
- 98. Castino, F., **Bookhagen, B.**, Strecker, M.R. (2017): Oscillations and trends of river discharge in the southern Central Andes and their linkage with climate variability, *Journal of Hydrology*, 555, 108-124, doi: 10.1016/j.hydrol.2017.10.001
- 97. Castino, F., **Bookhagen**, **B.**, and M. R. Strecker (2016), River-discharge dynamics in the Southern Central Andes and the 1976–77 global climate shift, *Geophys. Res. Lett.*, 43, 11,679–11,687, doi:10.1002/2016GL070868.
- 96. Bufe, A., D. P. S. Bekaert, E. Hussain, **B. Bookhagen**, D. W. Burbank, J. A. Thompson Jobe, C. Jie, L. Tao, L. Langtao, and W. Gan (2017), Temporal changes in rock-uplift rates of folds in the foreland of the Tian Shan and the Pamir from geodetic and geologic data, *Geophys. Res. Lett.*, 44, doi:10.1002/2017GL073627
- 95. Neelmeiher, J., Motagh, M., **Bookhagen, B.** (2017): High-Resolution Digital Elevation Models from Single-Pass TanDEM-X Imagery Over Mountainous Regions: A Case Study for Inylchek Glacier, Central Asia, *ISPRS Journal of Photogrammetry and Remote Sensing*, 130, p. 108-121, doi.org/10.1016/j.isprsjprs.2017.05.011
- 94. Brell, M., Segel, K., Guanter, L., **Bookhagen, B.** (2017): Hyperspectral and Lidar intensity data fusion: A framework for the rigorous correction of illumination, anisotropic effects and cross-calibration, *IEEE Transactions on Geoscience and Remote Sensing*, doi:10.1109/TGRS.2017.2654516
- 93. Cannon, F., Carvalho, L.M.V, Jones, C., Norris, J., **Bookhagen B.**, Kiladis G.N. (2017), Effects of Topographic Smoothing on the Simulation of Winter Precipitation in High Mountain Asia, *Journal of Geophysical Research-Atmospheres*, doi:10.1002/2016JD026038R
- Saptarshi, D., Thiede, R.C., Schildgen, T.F., Wittmann, H., Bookhagen, B., Scherler, D., Jain, V., Strecker, M.R. (2016): Holocene internal shortening within the northwest Sub-Himalaya: Out-of-sequence faulting of the Jwalamukhi Thrust, India, *Tectonics*, doi:10.1002/2015TC004002RRR
- 91. Norris, J., Carvalho, L.M.V., Jones, C., Cannon, F., **Bookhagen,** B., Palazzi, E., Tahir, A.A., (2016): The spatiotemporal variability of precipitation over the Himalaya: evaluation of one-year WRF model simulation, *Climate Dynamics*, doi:10.1007/s00382-015-2248-8
- 90. Hoffmann, B., Feakins, S., **Bookhagen, B.**, Olen, S., Adhikari, D.P., Mainali, J., Sachse, D. (2016): Climatic and geomorphic drivers of plant organic matter transport in the Arun River, E Nepal, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2016.07.008
- 89. Forte, A., Whipple, K.X., **Bookhagen, B.**, Rossi, W.M. (2016): Decoupling of Modern Tectonics, Climate, and Topography in the Caucasus, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.16.00235
- 88. Saptarshi, D., Thiede, R.C., Schildgen, T.F., Wittmann, H., **Bookhagen, B.**, Scherler, D., Jain, V., Strecker, M.R. (2016): Climate-driven sediment aggradation and incision since the Late Pleistocene in the NW Himalaya, India, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.16.00071
- 87. Hartmann, B., **Bookhagen, B.**, Chadwick, O.C. (2016): The effects of check dams and other erosion control structures on the restoration of Andean bofedal ecosystems, *Restoration*

- Ecology, doi:10.1111/rec.12402
- 86. Castino, F., **Bookhagen, B.**, Strecker, M.R. (2016): Rainfall variability and trends of the past six decades (1950-2014) in the subtropical NW Argentine Andes, *Climate Dynamics*, doi:10.1007/CLDY-D-15-00641
- 85. Smith, T. and **Bookhagen, B.** (2016): Assessing Uncertainty and Sensor Biases in Passive Microwave Data across High Mountain Asia, *Remote Sensing of Environment*, 181, 174-185, doi:10.1016/j.rse.2016.
- 84. Olen, S.M., **Bookhagen, B.**, Strecker, M.R. (2016): Role of climate and vegetation density in modulating denudation rates in the Himalaya, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2015.01076
- 83. Stolbova, V., Surovyatkina, E., **Bookhagen, B.**, Kurths, J. (2016): Tipping elements of the Indian monsoon: Prediction of onset and withdrawal, *Geophysical Research Letters*, 43, doi:10.1002/2016GL068392
- 82. Brell, M., Rogass, C., Segl, K., **Bookhagen, B.**, Guanter, L. (2016): Improving sensor fusion: A parametric method for the geometric co-alignment of airborne hyperspectral and lidar data, *IEEE Transactions on Geoscience and Remote Sensing*, doi:10.1109/TGRS.2016.2518930
- 81. Malik, N., **Bookhagen, B.**, Mucha, P (2016): Spatiotemporal patterns and trends of Indian monsoonal rainfall extremes, *Geophysical Research Letters*, doi:10.1029/2016GL067841
- 80. Schildgen, T.F. Robinson, R.A.J., Save, S. Phillips, W.M., Spencer, J.Q.G., Bookhagen, B., Scherler, D., Tofelde, S., Alonso, R.N., Kubik, P.W., Binnie, S.A., Strecker, M.R. (2016): Landscape response to late Pleistocene climate change in NW Argentina: Sediment flux modulated by basin geometry and connectivity, *JGR-Earth Surface*, doi:10.1002/2015JF003607
- 79. Wulf, H., **Bookhagen, B.**, Scherler, D. (2016): Differentiating between rain, snow, and glacier contributions to river discharge in the western Himalaya using remote-sensing data and distributed hydrological modeling, *Advances in Water Resources*, doi:10.1016/j.advwatres.2015.12.004
- 78. Harvey, J.E., Burbank, D.W., **Bookhagen, B.** (2015): Along-strike changes in Himalayan thrust geometry: Topographic and tectonic discontinuities in western Nepal, *Lithosphere*, 7 (5), 511-518, doi:10.1130/L444.1
- 77. Olen, S.M., **Bookhagen, B.**, Hoffmann, B., Sachse, D., Adhikari, D. P., Strecker, M.R. (2015): Understanding erosion rates in the Himalayan orogen: A case study from the Arun Valley, *JGR Earth Surface*, doi:10.1002/2014JF003410
- 76. Boers, N., Barbosa, H.M.J., **Bookhagen, B.**, Marengo, J.A., Marwan, N., Kurths, J. (2015): Propagation of Strong Rainfall Events from Southeastern South America to the Central Andes, *Journal of Climate*, **28**, 7641–7658, doi:10.1175/JCLI-D-15-0137.1
- 75. Thompson, J. A., D. W. Burbank, T. Li, J. Chen, and **Bookhagen, B.** (2015), Late Miocene northward propagation of the northeast Pamir thrust system, northwest China, *Tectonics*, *34*, *doi:10.1002/2014TC003690*
- 74. Smith, T., **Bookhagen, B.**, and Cannon , F. (2015): Improving semi-automated glacier mapping with a multi-method approach: applications in central Asia, *The Cryosphere*, doi:10.5194/tc-9-1747-2015
- 73. Boers, N., **Bookhagen, B.**, Marengo, J., Marwan, N., Kurths, J. (2015): Spatiotemporal characteristics and synchronization of extreme rainfall in South America with focus on the Andes Mountain range, *Climate Dynamics*, doi:10.1007/s00382-015-2601-6
- 72. Scherler, D., **Bookhagen, B.**, Wulf, H., Preusser, F., Strecker, M.R. (2015): Increased late Pleistocene erosion rates during fluvial aggradation in the Garhwal Himalaya, northern India, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2015.06.034

- 71. Alonzo, M., **Bookhagen, B.,** McFadden, J.P., Sun, A., Roberts, D.A. (2015): Mapping urban forest leaf area index with airborne lidar using penetration metrics and allometry, *Remote Sensing of Environment*, 162, 141-153, doi:10.1016/j.rse.2015.02.025
- 70. Torres Acosta, V., Schildgen, T.F., Clarke, B.A., Scherler, D., **Bookhagen, B.**, Wittmann, H., von Blanckenburg, F., Strekcer, M.R. (2015): Effect of vegetation cover on millennial-scale landscape denudation rates in East Africa, *Lithosphere*, doi:10.1130/L402.1
- 69. Boers, N., Donner, R.V., **Bookhagen, B.**, Kurths, J. (2015): Complex network analysis helps to identify impacts of the El Nino Southern Oscillation on moisture divergence in South America, *Climate Dynamics*, doi:10.1007/s00382-014-2265-7
- 68. Montero-Lopez, C., Strecker, M.R., Schildgen, T.F., Hongn, F., Guzman, S., **Bookhagen, B.**, Sudo, M. (2014): Local high relief at the southern margin of the Andean plateau by 9 Ma: evidence from ignimbritic valley fills and river incision, *Terra Nova*, doi:10.1111/ter.12120
- 67. Stolbova, V., Martin, P., **Bookhagen, B.**, Marwan, N., Kurths, J. (2014): Extreme rainfall of the South American monsoon system: A dataset comparison using complex networks, Topology and seasonal evolution of the network of extreme precipitation over the Indian subcontinent and Sri Lanka, *Nonlin. Processes Geophys.*, 21, 901-917, doi:10.5194/npg-21-901-2014
- 66. Boers, N., **Bookhagen, B.**, Marengo, J., Marwan, N., von Storch, J.-S., Kurths, J. (2014): Extreme rainfall of the South American monsoon system: A dataset comparison using complex networks, *Journal of Climate*, doi:10.1175/JCLI-D-14-00340.1
- 65. Boers, N., **Bookhagen, B.**, Barbosa, H. M. J., Marwan, N., Kurths, J. & Marengo, J., (2014): Prediction of Extreme Floods in the Eastern Central Andes based on a Complex Networks Approach, *Nature Communication*, doi:10.1038/ncomms6199
- 64. Cannon, F., Carvalho, L.M.V., Jones, C., **Bookhagen, B.** (2015): Multi-annual variations in winter westerly disturbances activity affecting the Himalaya, *Climate Dynamics*, doi:10.1007/s00382-014-2248-8
- 63. Draganits, E., Gier, S., Hofmann, C.C., Janda, C., **Bookhagen, B.**, Grasemann, B. (2014): Holocene versus modern catchment erosion rates at 300 MW Baspa II hydroelectric power plant (India, NW Himalaya), *Journal of Asian Earth Sciences*, 90, 157-172, doi:10.1016/j.seaes.2014.04.016
- 62. Mora, A., Ketcham, A., Camilo Higuera-Diaz, I., **Bookhagen, B.**, Jimenez, L., Rubiano, J. (2014): Formation of Passive-roof duplexes in the Colombian Subandes and Perú, *Lithosphere*, doi:10.1130/L340.1
- 61. Rohrmann, A., Strecker, M.R., **Bookhagen, B.**, Mulch, A., Sachse, D., Pingel, H., Alonso, R.N., Schildgen, T., Montero, C. (2014): Can stable isotopes ride out the storms? The role of convection for water isotopes in models, records, and paleoaltimetry studies in the central Andes, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2014.09.021
- 60. Boers, N., Rheinwalt, A., **Bookhagen, B.**, Barbosa, H.M.J., Marwan, N., Marengo, J., Kurths, J. (2014): The South American Rainfall Dipole: A Complex Network Analysis of Extreme Events, *Geophysical Research Letters*, doi:10.1029/2014GL061829
- 59. He, M., Zheng, H., **Bookhagen, B.**, Clift, P.D. (2014): Controls on erosion in the Yangtze River basin tracked by U-Pb detrital zircon dating, *Earth-Science Reviews*, 136, 121-140, doi:10.1016/j.earscirev.2014.05.014
- 58. Lange, S., Rockel, B., Volkholz, J., **Bookhagen, B.** (2014): Regional climate model sensitivities to parameterizations of convection and non-precipitating subgrid-scale clouds over South America, *Climate Dynamics*, doi:10.1007/s00382-014-2199-0
- 56. Godard, V., Bourles, D.L., Spinabella, F., Burbank, D.W., **Bookhagen, B.**, Fisher, G.B., Moulin, A., Leanni, L. (2014): Dominance of tectonics over climate in Himalayan denudation, *Geology*, doi:10.1130/G35342.1

- 55. Alonzo, M., **Bookhagen, B.**, Roberts, D.A. (2014): Urban tree species mapping using hyperspectral and lidar data fusion, *Remote Sensing of Environment*, 148, 70-83, doi:10.1016/j.rse.2014.03.018
- 54. Hanshaw, M.N., **Bookhagen, B.** (2014): Glacial areas, lake areas, and snow lines from 1975 to 2012: status of the Cordillera Vilcanota, including the Quelccaya Ice Cap, northern central Andes, Peru, *The Cryosphere*, 8, 1-18, doi:10.15194/tc-8-1-2014
- 53. Coutand, I., Whipp, D.M., Grujic, D., Bernet, M., Fellin, M.G., **Bookhagen, B.**, Landry, K.R., Ghalley, S.K., Duncan, C. (2014): Geometry and kinematics of the Main Himalayan Thrust and Neogene crustal exhumation in the Bhutanese Himalaya derived from inversion of multi-thermochronologic data, *Journal of Geophysical Research-Solid Earth*, doi:10.1002/2013JB010891
- 52. Hirschmiller, J., Grujic, D., **Bookhagen, B.**, Coutand, I., Huyghe, P., Mugnier, J.-L., Ojha, T. (2014): What controls the growth of the Himalayan foreland fold-and-thrust belt?, *Geology*, doi:10.1130/G35057.1
- 51. Oskin, M.E., Burbank, D.W., Phillips, F.M., Marrero, S.M., **Bookhagen, B.**, Selander, J.A. (2014): Relationship of channel steepness to channel incision rate from a tilted and progressively exposed unconformity surface, *Journal of Geophysical Research-Earth Surface*, doi:10.1002/2013JF002826
- 50. Scherler, D., **Bookhagen, B.**, Strecker, M.R. (2014): Tectonic control on 10Be-derived erosion rates in the Garhwal Himalaya, India, *Journal of Geophysical Research-Earth Surface*, doi:10.1002/2013JF002955
- 49. Baguskas, S.A., Peterson, S.H., **Bookhagen, B.**, Still, C.J. (2014): Evaluating spatial patterns of drought-induced tree mortality in a coastal California pine forest, *Forest Ecology and Management*, doi:10.1016/j.foreco.2013.12.020
- 48. Yildrim, C., Schildgen, T.F., Echtler, H., Melnick, D., **Bookhagen, B.**, Ciner, A., Niedermann, S., Merchel, S., Martschini, M., Steier, P., Strecker, M.R. (2013): Tectonic implications of fluvial incision and pediment deformation at the northern margin of the Central Anatolian Plateau based on multiple cosmogenic nuclides, *Tectonics*, doi:10.1002/tect.20066
- 47. Amidon, W.H., **Bookhagen, B.**, Avouac, J.P., Smith, T., Rood, D. (2013): Late Pleistocene glacial advances in the western Tibet interior, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2013.08.041
- 46. Boers, N., **Bookhagen, B.**, Marwan. N., Kurths, J., Marengo, J. (2013): Complex networks identify spatial patterns of extreme rainfall events of the South American Monsoon System, *Geophysical Research Letters*, 40, 1-7, doi:10.1002/grl.50681
- 45. Fisher, G.B., **Bookhagen, B.**, Amos, C.B. (2013): Channel planform geometry and slopes from freely available high-spatial resolution imagery and DEM fusion: Implications for channel width scalings, erosion proxies, and fluvial signatures in tectonically active landscapes, *Geomorphology*, doi:10.1016/j.geomorph.2013.04.011
- 44. Godard, V., Tucker, G.E., Fisher, G.B., Burbank, D.W., **Bookhagen, B.** (2013): Frequency-dependent landscape response to climatic forcing, *Geophysical Research Letters*, 40, 859-863, doi:10.1002/grl.50253
- 43. Burbank, D.W., **Bookhagen, B.**, Gabet, E.J., Putkonen, J. (2012): Modern climate and erosion in the Himalaya, *Compres Rendus Geoscience, 344, 610-626*
- 42. Fisher, G.B., Amos, C.B., **Bookhagen, B.**, Burbank, D.W., Godard, V. (2012): Channel widths, landslides, faults, and beyond: The new world order of high-spatial resolution Google Earth imagery in the study of earth surface processes, *Geological Society of America Special Papers*, 492, 1-22, doi:10.1130/2012.2492(01)
- 41. Perroy, R.L., **Bookhagen, B.**, Howarth, J., Chadwick, O. (2012): Holocene and Anthropocene landscape change: arroyo formation on Santa Cruz Island, California, *Annals of the Association of American Geographers, doi:* 10.1080/00045608.2012.715054

- 40. Godard, V., Burbank, D.W., Bourles, D.L., **Bookhagen, B.**, Braucher, R., Fisher, G.B. (2012): Impact of glacial erosion on 10Be concentrations in fluvial sediments of the Marsyandi catchment, central Nepal, *Journal of Geophysical Research-Earth Surface*, doi:10.1029/2011JF002230
- 39. Wulf, H., **Bookhagen, B.** and Scherler, D. (2012): Climatic and geologic controls on suspended sediment flux in the Sutlej River Valley, western Himalaya, *Hydrology and Earth System Sciences*, doi:10.5194/hess-16-2193-2012
- 38. **Bookhagen, B.** and Strecker, M.R. (2012): Spatiotemporal trends in erosion rates across a pronounced rainfall gradient: examples from the southern Central Andes, *Earth and Planetary Science Letters, doi:10.1016/j.epsl.2011*
- Carvalho, L.M.V., Jones, C., Posadas, A.N.D., Quiroz, R., Bookhagen, B., and Liebmann, B. (2012): Precipitation characteristics of the South American Monsoon System derived from multiple datasets, *Journal of Climate*, doi:10.1175/JCLI-D-11-00335.1
- 36. **Bookhagen, B. (2012):** Himalaya Groundwater, *Nature Geoscience, News and Views*, doi:10.1038/ngeo1366
- 35. Schildgen, T.F., Cosentino, D., **Bookhagen, B.**, Niedermann, S., Yildrim, C., Echtler, H., Wittmann, H., Strecker, M.R. (2012): Multi-phased uplift of the southern maring of the Central Anatolian plateau, Turkey: A record of tectonic and upper mantle processes, *Earth and Planetary Science Letters*, 317-318, 85-95, doi:10.1016/j.epsl.2011.12.003
- 34. Goode, J., Burbank, D.W., **Bookhagen, B.** (2011): Basin Width Control of Faulting in the Naryn Basin, South-Central Kyrgyzstan, *Tectonics*, *doi:10.1029/2011TC002910*
- 33. Malik, N., **Bookhagen, B.**, Marwan, N., Kurths, J. (2011): Analysis of spatial and temporal extreme monsoonal rainfall over South Asia using complex networks, *Climate Dynamics, doi:10.1007/s00382-011-1156-4*
- 32. Scherler, D., **Bookhagen, B.**, Strecker, M.R. (2011): Hillslope-glacier coupling: the interplay of topography and glacial dynamics in High Asia, *JGR-Earth Surface*, doi:10.1029/2010JF001751
- 31. Scherler, D., **Bookhagen, B.**, Strecker, M.R. (2011): Spatially variable response of Himalayan glaciers to climate change affected by debris cover, *Nature Geoscience*, doi:10.1038/ngeo1068
- 30. Hain, M., Strecker, M.R., **Bookhagen B.**, Alonso, R.N., Pingel, H., Schmitt, A.K. (2011): Neogene to Quaternary broken-foreland formation and sedimentation dynamics in the Andes of NW Argentina (25S), *Tectonics*, *doi:10.1029/2010TC002703*
- 29. **Bookhagen, B.** and Burbank, D.W. (2010): Towards a complete Himalayan hydrologic budget: The spatiotemporal distribution of snow melt and rainfall and their impact on river discharge, *Journal of Geophysical Research-Earth Surface, doi:10.1029/2009jf001426*
- 28. **Bookhagen, B.** (2010): Appearance of extreme monsoonal rainfall events and their impact on erosion in the Himalaya, *Geomatics, Natural Hazards, Risk, 1, 1, 37-50*
- 27. Perroy, R., **Bookhagen, .B.**, Asner, G., Chadwick, O. (2010): Comparison of gully erosion estimates using airborne and ground-based LiDAR, *Geomorphology*, doi:10.1016/j.geomorph.2010.01.009
- 26. Rehak, K., **Bookhagen, B.**, Strecker, M.R., Echtler, H.P. (2010): Climatic controls on drainage-basin morphology the western Andean flank between 15.5° and 41.5°S, *Earth Surface Processes and Landforms*
- Scherler, D., Bookhagen, B., Strecker, M.R., von Blanckenburg, F. and Rood, D. (2010): Timing and Extent of Late Quaternary Glaciation in the western Himalaya constrained by 10Be Moraine Dating in Garhwal, India, Quaternary Science Reviews, doi:10.1016/j.quascirev.2009.11.031

- 24. Wulf, H., **Bookhagen, B.**, and Scherler, D. (2010): Seasonal precipitation gradients and their impact on fluvial sediment flux in the Northwest Himalaya, *Geomorphology, doi:10.1016/j.geomorph.2009.12.003*
- 23. Hren, M., **Bookhagen, B.**, Blisniuk, P., Booth, A., Chamberlain, C.P (2009): d18O and dD of streamwater across the Himalaya and Tibetan Plateau: Implications for moisture sources and paleoelevation reconstructions, *Earth and Planetary Science Letters*, 288, 1-2, 20-32
- 22. Strecker, M.R., Alonso, R., **Bookhagen, B.**, Carrapa, B., Coutand, I., Hain, H.P., Hilley, G.E., Mortimer, E., Schoehnbohm, L., and Sobel E.R. (2009): Does the topographic distribution of the central Andean Pune Plateau result from climatic or geodynamic processes, *Geology, 37, 7, doi:10.1130/G25545A.1*
- 21. Melnick, D., **Bookhagen, B.** Strecker, M.R., Echtler, H.P. (2009): Segmentation of megathrust rupture zones from fore-arc deformation patterns over hundreds to millions of years, Arauco Peninsular, Chile, *Journal of Geophysical Research-Earth Surface*, 114, B01407, doi:10.1029/2008JB005788
- Thiede, R.C., Ehlers, T.A., Bookhagen, B., Strecker, M.R (2009): Erosional Variability along the NW Himalaya margin, *Journal of Geophysical Research-Earth Surface*, 114, F01015, doi:10.1029/2008JF001010
- 19. **Bookhagen, B.** and Strecker, M.R. (2008): Orographic barriers, high-resolution TRMM rainfall, and relief variations along the eastern Andes, *Geophysical Research Letters*, 35, L06403, doi:10.1029/2007GL032011
- 18. Gabet, E.J., Burbank, D.W., Pratt-Sitaula, B., Putkonen, J., **Bookhagen, B.** (2008): Modern erosion rates in the High Himalayas of Nepal, *Earth and Planetary Science Letters*, 267, 482-494
- 17. Strecker, M.R., Alonso, R.N., **Bookhagen, B.**, Carrapa, B., Hilley, G.E., Sobel, E., and Trauth, M.H. (2007): Tectonics and Climate of the Southern Central Andes, *Annual Reviews of Earth and Planetary Sciences, doi:10.1146/annurev.earth.35.031306.140158*
- Craddock, W., Burbank, D.W., Bookhagen, B., Gabet, E. (2007): Bedrock channel geometry along an orographic rainfall gradient in the upper Marsyandi River valley in central Nepal, Journal of Geophysical Research-Earth Surface, 112, F03007, doi:10.1029/2006JF000589
- 15. Hren, M.T., Chamberlain, P., Hilley, G.E., **Bookhagen, B.** (2007): Major ion chemistry of the Yarlung Tsangpo/Brahmaputra river: Chemical weathering, erosion, and CO₂ consumption in the southern Tibetan Plateau and Eastern Syntaxis of the Himalaya, *Geochemica et Cosmochimica acta*, 71, 2907-2935
- Grujic, D., Coutand, I., Bookhagen, B., Bonnet, S., Blythe, A., Duncan, C. (2006): Climatic forcing of erosion, landscape, and tectonics in the Bhutan Himalayas, *Geology*, 34 (10), 801-804
- 13. **Bookhagen, B.**, Echtler, H.P., Melnick, D., Strecker, M.R., Spencer, J.Q.G. (2006): Using uplifted Holocene beach berms for paleoseismic analysis on the Santa María Island, south-central Chile, *Geophys. Res. Lett.*, 33, L15302, doi:10:1029/2006GL026734
- 12. Melnick, D., **Bookhagen, B.**, Echtler, H.P., Strecker, M.R. (2006): Coastal deformation and great subduction earthquakes: Isla Santa María, Chile (37°S), *GSA Bulletin*, 118, (9/10), doi:10.1130/B25865.1
- 11. **Bookhagen, B.**, Fleitmann, D., Nishiizumi, K., Strecker, M.R., Thiede, R.C. (2006): Holocene Monsoonal dynamics and fluvial terrace formation in the northwest Himalaya, India, *Geology*, 34 (7), 601-604
- 10. Thiede, R.C., Arrowsmith, R., **Bookhagen, B.**, McWilliams, M., Sobel, E., and Strecker, M. (2006): Dome formation and extension in the Tethyan Himalaya, Leo Pargil, northwest India, *GSA Bulletin*, 118 (5/6), 635-650, doi:10.1130/B25872.1

- 9. **Bookhagen, B.** and Burbank, D.W. (2006): Topography, Relief, and TRMM-derived rainfall variations along the Himalaya, *Geophys. Res. Lett.*, 33, L08405, doi:10:1029/2006GL026037 [selected as AGU Editor's Choice in May 2006]
- 8. Thiede, R.C., **Bookhagen, B.**, Arrowsmith, J.R., Sobel, E.R., Strecker, M.R. (2004): Climatic control on rapid exhumation along the Southern Himalayan Front, *Earth and Planetary Science Letters*, 222 (3-4), 791-806
- 7. **Bookhagen, B.**, Thiede, R.C., Strecker, M.R. (2005): Late Quaternary intensified monsoon phases control landscape evolution in the northwest Himalaya, *Geology*, 33 (2), 149-152
- 6. **Bookhagen, B.**, Thiede, R.C., Strecker. M.R. (2005): Abnormal Monsoon years and their control on erosion and sediment flux in the high, arid northwest Himalaya, *Earth and Planetary Science Letters*, 231, 131-146
- Thiede, R.C., Arrowsmith, R., Bookhagen, B., McWilliams, M., Sobel, E., and Strecker, M.R. (2005): From tectonically to erosionally controlled development of the Himalayan orogen, *Geology*, 33(8), 689-692
- 4. Trauth, M.H., **Bookhagen, B.**, Mueller, A., Strecker, M.R. (2003): Late Pleistocene Climate Change and Erosion in the Santa Maria Basin, NW Argentina, *Journal of Sedimentary Research*, 73 (1), 82-90
- 3. Trauth, M.H., **Bookhagen, B.**, Marwan, N., Strecker, M.R. (2003): Multiple landslide clusters record Quaternary climate changes in the northwestern Argentine Andes, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 194, 109-121
- Bergner, A.G., Trauth, M.H., Bookhagen, B. (2003): Magnitude of precipitation / evaporation changes in the Naivasha Basin (Kenya) during the last 150 kyr, Global and Planetary Change, 36 (1-2), 117-135
- 1. **Bookhagen, B.**, Haselton, K., Trauth, M. (2001): Hydrological Modelling of a Pleistocene landslide-dammed lake in the Santa Maria Basin, NW Argentina, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 169, 113-127

Synergistic Activities and Professional Service

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MSc and PhD Advisees

- (1) Primary advisor for 3 MSc students at UC Santa Barbara (completed); Primary advisor for 12 MSc students at the University of Potsdam (completed) and 4 in progress.
- (2) Primary advisor for 4 completed PhD theses and 5 PhD theses in progress (at the University of Potsdam.

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