Prof. Dr.-Ing. Wu, Wei

Name	WU, Wei
Position	Professor and director
Affiliation	Institute of Geotechnical Engineering BOKU University Feistmatelstr. 4, 1180 Vienna, Austria
Tel	0043 1 47654 87300
Google scholar	https://scholar.google.com/citations?user=3jfgps8AAAAJ&hl=de
Website	https://boku.ac.at/en/baunat/igt
Nationality	German
Private address	Urbanusgasse 12, 3400 Klosterneuburg, Austria

Education

1986 – 1993	Geotech. Eng. (Dr.-Ing.), Karlsruhe University, Germany
1982 – 1985	Geotech. Eng., (MSc), Xian University of Technology, China
1978 – 1982	Civil Eng. (Bachelor), Wuhan University, China

Employment

2003 -	Professor & director, BOKU, Vienna, Austria
2002 - 2003	Project manager, Electrowatt Infra Ltd, Zurich, Switzerland
1993 - 2002	Senior engineer, Lahmeyer International Ltd, Frankfurt, Germany
1992 – 1986	Assistant, Karlsruhe University, Germany

Service to research community

- Editor-in-chief: Acta Geotechnica (founding editor-in-chief) https://www.springer.com/journal/11440
- Editor-in-chief: Springer Series in Geomechanics and Geoengineering https://www.springer.com/series/8069
- Associate editor: Canadian Geotechnical Journal from 2020
- Chairman of Board, Otto Pregl Foundation for Fundamental Geotechnical Research, Vienna, Austria (starting capital about 3 million Euro) https://boku.ac.at/en/baunat/igt/otto-pregl-stiftung
- Convener of several conferences, e.g. China-Europe Conference on Geotechnical Engineering, Vienna, 2018; International Symposium on Particle-Based Continuum Methods and their Applications in Geomechanics, Vienna, 2019
- Editor of 5 books by Springer-Nature

Prize and award

- Advanced Grant, European Research Council, 2024
- Gold medal, Technical University of Brno, Czech Republic, 2024

Patent

A device for charging concrete in tremie pipe, European Patent Office, 2023

Teaching activities in English and German

Undergraduate and graduate courses in German and English: soil mechanics, foundation engineering, advanced soil mechanics, underground constructions, slope engineering, geoenvironmental engineering (landfill). Supervision of three habilitations, more than thirty PhD theses and more than one hundred MSc theses.

Research expertise

I have coordinated several large research projects as PI with project partners across Europe and the world funded by the European Commission. My strength lies in the initiation and coordination of multidisciplinary research projects. My personal expertise includes the following fields:

- Geomechanics, granular materials
- Foundation engineering
- Tunneling and underground construction
- Landslide and debris flow
- Soil bioengineering: interaction between soil and plant
- Geo-energy and energy storage
- Constitutive model and numerical simulations

Engineering practice

I had worked with engineering companies in Germany and Switzerland with experience of more than ten years between 1992 and 2003 as senior engineer and project manager with leading engineering companies in Europe, Lahmayer International Ltd (now Tractebel) in Germany and Electrowatt Ltd (now Pöyry) in Switzerland. I participated in numerous high profiles projects around the world such as

- High speed rail-link between Frankfurt and Cologne, Germany
- Highway project, Cotapata-Santa Barbara, Bolivia
- Metro and airport Athens, Greece
- Foundation works, Potsdamer Platz, Berlin, Germany
- Egnatia Odos, Greece
- Metro Bangkok, Thailand
- Capital airport rehabilitation, Kuwait
- Gotthard Base Tunnel, Switzerland

Selected research projects

Project title: Modeling transient granular flow
Funding: European Research Council (https://erc.europa.eu/sites/default/files/2024-04/erc-2023-adg-results-pe.pdf)
Budget: 2.5 Million Euro (own budget 2.5 M€)
My role: PI
Duration: 2024 – 2029

Project title: Localization in Geophysics, Geohazards and Geoengineering
Funding: European Commission (https://cordis.europa.eu/project/id/101129729)
Budget: 1.5 Million Euro (own budget 0.5 M€)
Partners: 9 partners from 8 European countries
My role: PI
Duration: 2024 – 2028

Project title: High-fidelity multiscale modelling of debris flows
Funding: Austrian Science Foundation (https://boku.ac.at/baunat/newsitem/76976)
Budget: 400,000 Euro
My role: PI
Duration: 2023 – 2027

Project title: Fracture across scales and materials, processes and discipline
Funding: European Commission (https://cordis.europa.eu/project/id/734485)
Budget: 1.1 Million Euro (own budget 0.2 M€)
Partners: 11 partners from 8 European countries
My role: Co-PI
Duration: 2017 – 2023

Project title: Towards geohazards resilient infrastructure under changing climates
Funding: European Commission (https://cordis.europa.eu/project/id/778360)
Budget: 2.2 Million Euro (own budget 0.4 M€)
Partners: 10 partners from 6 European countries
My role: Co-PI
Duration: 2017 – 2023

Project title: Multiscale Modelling of Landslides and Debris Flows
Funding: European Commission (www.mumolade.com/)
Budget: 4.3 Million Euro (own budget 1.2 M€)
Partners: 13 partners from 7 European countries
My role: PI
Duration: 2012 – 2016

Project title: Geotechnical control in quality and environment during road construction
Funding: Construction Company Porr AG
Budget: 1.2 Million Euro
My role: PI
Duration: 2006 – 2020

Project title: Reinforced Vegetation Numerical Evaluation of Slopes
Funding: European Commission (https://cordis.europa.eu/project/id/324466)
Budget: 0.8 Million Euro (own budget 0.4 M€)
Partners: 4 partners from 3 European countries
My role: PI
Duration: 2013 – 2016

Project title: Integrated Risk Assessment of Hydrologically-Driven Landslides
Funding: European Commission (https://cordis.europa.eu/project/id/295225)
Budget: 250,000 Euro
Partners: 3 partners from China, India and Mexico
My role: PI
Duration: 2014 – 2017

Project title: Numerical and experimental studies of failure initiation in unsaturated slopes
Funding: Austrian Science Foundation (web.stanford.edu/~borja/nsffwf/)
Budget: 320,000 Euro
Partner: Prof. Borja, Stanford University, USA
My role: PI
Duration: 2009 – 2013

Project title: DEM simulation for industrial and scientific applications
Funding: European Commission (FP7) (https://cordis.europa.eu/project/id/238577)
Budget: 3.2 Million Euro (own budget 0.4 M€)
Partners: 12 partners from 7 European countries
My role: Co-PI
Duration: 2009 – 2014

Edited books

- Wu W, Wang YT, Recent Geotechnical Research at BOKU, Springer, 2024
- Wu W, Desiderata Geotechnica, Springer, 2019
- Wu W, Recent Advances in Geotechnical Research, Springer, 2019
- Wu W, Recent Advances in Modeling Landslides and Debris Flows, Springer 2015
- Wu W and Yu HS, Modern Trends in Geomechanics, Springer Berlin, 2006

Publications in peer reviewed journals

1. Wang YD, Wu W, Numerical model for granular flow with interstitial fluid, Int. J. Numerical and Analytical Methods in Geomechanics, 49, 2339-2356, 2025
2. Fang HJ, Wang S, Kang X, Li DQ, Wu W, Świtała B, SPH implementation of a dynamic hypoplastic model for seismic large deformation analysis in slopes, Int. J. Numerical and Analytical Methods in Geomechanics, 49, 2257-2274, 2025
3. Cueva M, Kang X, Wang S, Soranzo E, Wu W, Unveiling the role of saturation and displacement rate in the transition from slow movement to catastrophic failure in landslides, Engineering Geology, 352, 108042, 2025
4. Wani S, Kandasami RK, Wu W, Hypoplastic model for gas hydrate-bearing sediments considering pore morphology, Computers and Geotechnics, 181, 107115, 2025
5. Kang X, Wang S, Wu W, Martinez A, Residual-state mechanical behavior of soil–rock interface within landslide shear zones, Acta Geotechnica, 20, 2221–2236, 100379, 2025
6. Saif A, Siad I, Soranzo E, Wu W, Three-dimensional parametric analyses of cross-passages in shallow tunnels within noncohesive soils, Transportation Infrastructure Geotechnology, 12, 118, 2025
7. Cueva M, Soranzo E, Saif A, Wang S, Wu W, Implications of the degree of saturation on the mechanical behaviour of a slow-moving landslide in the Three Gorges region, China, Bulletin of Engineering Geology and the Environment, 84, 213, 2025
8. Heidari S, Amiri M, Harifi A, Wu W, Effect of thermal treatment on stabilization and solidification of heavy metal contaminated clayey soil, Scientific Reports, 15, 17197, 2025

9. Wani S, Kandasami RK, Wu W, MS-IS hypoplastic model considering stiffness degradation under cyclic loading conditions, Int. J. Numerical and Analytical Methods in Geomechanics, 49, 776-793, 2025
10. Soranzo E, Guardiani C, Wu W. Convolutional neural network prediction of the particle size distribution of soil from close-range images. Soils and Foundations, 65, 101575, 2025
11. Fan GW, Li XF, Wu W, On anisotropic local bifurcation based on hypoplastic model, Int. J. Mech. Sci, 284, 109733, 2024
12. Bi ZH, Wu W, Zhang LJ, Peng C, Efficient random field generation with rotational anisotropy for probabilistic SPH analysis of slope failure, Int. J. Numerical and Analytical Methods in Geomechanics, 48, 4520-4528, 2024
13. Wang YD, Wu, W, A SPH model bridging solid-like and fluid-like behaviour in granular materials, Int. J. Numerical and Analytical Methods in Geomechanics, 49, 776-793, 2024
14. Wang YD, Wu W, Numerical model for solid-like and fluid-like behaviour of granular flows, Acta Geotechnica, 19, 6483-6494, 2024
15. Yue C, Xu CS, Wu W, Wang RQ, Du XL, Failure mechanisms of saturated sand under different loading frequencies: Experimental observation and constitutive modelling, Computers and Geotechnics, 170, 106309, 2024
16. Wang S, Fang HJ, Kang X, Li DQ, Wu W, Simhypo-sand: a simple hypoplastic model for granular materials and SPH implementation. Acta Geotech. (2024) online
17. Wu M, Zhao, Z, Wu W, Cai G. Detection of volatile organic compounds by membrane interface probe: Multiphase numerical model for in-situ test evaluation. Computers and Geotechnics, 173, 106491, 2024
18. Wang Y, Wu W. Hypoplastic model for solid-like and fluid-like granular flows. Computers and Geotechnics. 172, 106466. 2024
19. Bi Z, Wu W, Zhang L, Peng C. Uncertainty Analysis of Post-Failure Behavior in Landslides Based on SPH Method and Generalized Geotechnical Random Field Theory. Computers and Geotechnics. 171, 106363, 2024
20. Qian H, Xu C, Wu W, Du X. A hypoplastic model considering grain breakage and wetting effect for granular material. Computers and Geotechnics. 171, 106329, 2024
21. Yue C, Xu C, Wu W, Wang R, Du X. Failure mechanisms of saturated sand under different loading frequencies: Experimental observation and constitutive modelling. Computers and Geotechnics. 170, 106309, 2024
22. Su Z, Wang S, Li D, Sheng J, Wu, W. SPH–DEM modeling overtopping failure of earthfill dams. Acta Geotechnica. 19(2), 2024
23. Zhu C, Wu W, Peng C, Wang S, Wei X. SPH implementation of a critical state-based hypoplastic model for granular materials in large-deformation problems. Computers and Geotechnics. 166, 2024
24. Liao D, Yang ZX, Wang S, Wu W. A hypoplastic model for cemented sand under monotonic and cyclic loading. Canadian Geotechnical Journal. 61(5), 2024
25. Wang, Y; Borja, RI; Wu, W; Dynamic strain localization into a compaction band via a phase-field approach. Journal of the Mechanics and Physics of Solids, 105228, 2023
26. Bi Z, Wu W, Zhang L, Peng C. Uncertainty Analysis of Post-Failure Behavior in Landslides Based on SPH Method and Generalized Geotechnical Random Field Theory. Computers and Geotechnics, 171, 2024
27. Qian H, Wu W, Du X, Xu C. A Hypoplastic Constitutive Model for Granular Materials with Particle Breakage. International Journal of Geomechanics. 23(6), 2023
28. Liu S, Wang Y, Wu W. A modified phase-field model for cohesive interface failure in quasi-brittle solids. International Journal of Mechanical Sciences. 252, 2023
29. Qian H, Wu W, Xu C, Liao D, Du X. An extended hypoplastic constitutive model considering particle breakage for granular material. Computers and Geotechnics. 159, 2023

30. Wang Y, Wu W. A bond-level energy-based peridynamics for mixed-mode fracture in rocks. Computer Methods in applied Mechanics and Engineering. 141, 2023
31. Su X, Wu W, Tang H, Huang L, Xia D, Lu S. Physicochemical effect on soil in sliding zone of reservoir landslides. Engineering Geology. 324, 2023
32. Wang H, Zou J, Wu W, Ni W. Assessing unsaturated permeability of loess under multiple rainfalls. Engineering Geology. 324, 2023
33. Qian H, Wu W, Xu C, Du X. A hypoplastic model for hydrate-bearing sand considering hydrate saturation and grain breakage. International Journal For Numerical and analytical Methods in Geomechanics. 47(16), 2023
34. Ashour T, Korjenic A, Abdelfattah A, Sesto E, Wu W. Shrinkage Behavior of Stabilized Earth Bricks Reinforced with Wheat and Barley Straw. Sustainability. 15(23), 2023
35. He Y, Liao H, Wu W, Wang S. Hypoplastic modeling of inherent anisotropy in normally and overconsolidated clays. Acta Geotechnica. 18(12), 2023
36. Chen Z, Liu J, Yu C, Wang S, Wu W. Analytical solutions to thermal gradient enhanced diffusion of organic contaminants through unsaturated composite liner: considering the existence of capillary fringe. Acta Geotechnica. 18(9), 2023
37. Yuan W, Liu M, Zhang X, Wang H, Zhang W, Wu W. Stabilized smoothed particle finite element method for coupled large deformation problems in geotechnics. Acta Geotechnica. 18(3), 2023
38. Liu J, Chen Z, Yu C, Wang S, Wu W, Xie S. Analytical solution for contaminant transport through a GCL-enhanced composite cutoff wall system. Computers and Geotechnics. 164, 2023
39. Zhu C, Peng C, Wu W. Smoothed particle hydrodynamics modelling of particle-size segregation in granular flows. Journal of Fluid Mechanics. 977, 2023
40. Liu J, Chen Z, Yu C, Wang S, Wu W. Effect of retardation and capillarity on organic contaminant diffusion through an unsaturated composite liner: An analytical approach. International Journal For Numerical and analytical Methods in Geomechanics. 47(11), 2023
41. Wang Y, Wu W, Peng C. Regularized SPH model for soil-structure interaction with generalized frictional boundary. International Journal For Numerical and analytical Methods in Geomechanics. 47(10), 2023
42. Soranzo E, Guardiani C, Wu W. Reinforcement Learning for the Face Support Pressure of Tunnel Boring Machines. Geosciences. 13:82, 2023
43. Wu H, Wu W, Liang W, Dai F, Liu H, Xiao Y. 3D DEM modeling of biocemented sand with fines as cementing agents. International Journal For Numerical and analytical Methods in Geomechanics. 47(2), 2023
44. Soranzo E, Guardiani C, Chen Y, Wang Y, Wu W. Convolutional neural networks prediction of the factor of safety of random layered slopes by the strength reduction method. Acta Geotechnica. 18(6), 2023
45. Świtała, BM, Carlotta G, Enrico S, Wei W, Machine learning-aided reliability analysis of rainfall-induced landslide of root-reinforced slopes. Canadian Geotechnical Journal. 60:1877-94, 2023
46. Alipour M, Wu W, Hypoplastic model with an inner memory surface for sand under cyclic loading. Computers and Geotechnics. 162, 2023
47. Cao XL, Wang S, Gong WM, Wu W, Dai GL, Zhou FX, Experimental and theoretical study on dynamic stiffness of floating single pile and pile groups in multi-layered soil, Soil Dynamics and Earthquake Engineering, 157, 107282, 2022
48. Guardiani C, Soranzo E, Wu W, Time-dependent reliability analysis of unsaturated slopes under rapid drawdown with intelligent surrogate models, Acta Geotechnica, 17(4): 1071-109, 2022

49. He, YQ; Wang, S; Liao, HJ; Wu, W; A hypoplastic constitutive model for structured soils, Computers and Geotechnics, 151, 104935, 2022
50. Hill, JM; Bhattacharya, D; Wu, W; Bagnold velocity profile for steady-state dense granular chute flow with base slip, Rheologica Acta, 61(3): 207-214, 2022
51. Kang, X; Wang, S; Wu, W; Xu, GL; Residual state rate effects of shear-zone soil regulating slow-to-fast transition of catastrophic landslides, Engineering Geology, 304, 106692, 2022
52. Kang, X; Wang, S; Wu, W; Xu, GL; Zhao, JQ; Liu, FS; Soil-water interaction affecting a deep-seated landslide: from field monitoring to experimental analysis, Bulletin of Engineering Geology and Environment, 81(3), 119, 2022
53. Liu, SJ; Wang, YT; Peng, C; Wu, W; A thermodynamically consistent phase field model for mixed-mode fracture in rock-like materials, Computer Methods in Applied Mechanics and Engineering, 392, 114642, 2022
54. Martinez, A. et al., Bio-inspired geotechnical engineering: principles, current work, opportunities and challenges, Géotechnique, 72(8): 687-705, 2022
55. Peng, C; Li, S; Wu, W; An, HC; Chen, XQ; Ouyang, CJ; Tang, H; On three-dimensional SPH modelling of large-scale landslides, Canadian Geotechnical Journal, 59(1): 24-39, 2022
56. Soranzo, E; Guardiani, C; Wu, W; The application of reinforcement learning to NATM tunnel design, Underground Space, 7(6): 990-1002, 2022
57. Soranzo, E; Guardiani, C; Saif, A; Wu, W; A Reinforcement Learning approach to the location of the non-circular critical slip surface of slopes, Computers and Geosciences, 166, 105182, 2022
58. Soranzo, E; Guardiani, C; Wu, W; A soft computing approach to tunnel face stability in a probabilistic framework, Acta Geotechnica,17(4): 1219-1238, 2022
59. Wang, S; Wu, W; Cui, DS; On mechanical behaviour of clastic soils: numerical simulations and constitutive modelling, Géotechnique, 72(8): 706-721, 2022
60. Wang, Y; Wu, W; Evans, TM; Wu, HR; Xiao, Y; General friction law for velocity-stress dependent phase transition in granular flow, Int. J. Numerical and Analytical Methods in Geomechanics, 46(8): 1525-1543, 2022
61. Xu, GF; Wu, W; Qi, JL; A triaxial creep model for frozen soil based on hypoplasticity, European J. Environment and Civil Engineering, 26(7): 2569-2580. 2022
62. Zhu, CW; Peng, C; Wu, W; Wang, C; A multi-layer SPH method for generic water-soil dynamic coupling problems. Part I: Revisit, theory, and validation, Computer Methods in Applied Mechanics and Engineering, 396, 115106, 2022
63. Zhu, CW; Peng, C; Wu, W; Lagrangian meshfree particle method (SPH) based simulation for granular flow in a rotating drum with regularized mu(I) elastoplastic model. Powder Technology, 408, 117699, 2022
64. Zhu, CW; Wu, W; Ying, HW; Gong, XN; Guo, PP; Drainage-induced ground response in a twin-tunnel system through analytical prediction over the seepage field, Underground Space, 7(3): 408-418, 2022
65. Cui, DS; Wang, S; Chen, Q; Wu, W; Experimental Investigation on Loading-Relaxation Behaviors of Shear-Zone Soil, Int. J. Geomechanics, 21(4), 06021003, 2021
66. Edip, K; Sheshov, V; Wu, W; Bojadjieva, J; Numerical modelling of saturated boundless media with infinite elements, Acta Geotechnica, 16(8): 2683-2692. 2021
67. Guo, XG; Peng, C; Wu, W; Wang, YQ; Unified constitutive model for granular-fluid mixture in quasi-static and dense flow regimes, Acta Geotechnica, 16(3): 775-78, 2021
68. Hill, JM; Bhattacharya, D; Wu, W; Steady-state similarity velocity profiles for dense granular flow down inclined chutes, Granular Matter, 23(2), 27, 2021
69. Peng, C; Basic, M; Blagojevic, B; Basic, J; Wu, W; A Lagrangian differencing dynamics method for granular flow modeling, Computers and Geotechnics, 137, 104297, 2021

70. Peng, C; Zhan, L; Wu, W; Zhang, BY; A fully resolved SPH-DEM method for heterogeneous suspensions with arbitrary particle shape, Powder Technology, 387: 509-526, 2021
71. Wang, S., Wu, W., A simple hypoplastic model for overconsolidated clays, Acta Geotechnica, 16, 21-29, 2021
72. Wang, S; Wu, W; Validation of a simple hypoplastic constitutive model for overconsolidated clays, Acta Geotechnica, 16(1): 31-4. 2021
73. Wang, S; Idinger, G; Wu, W; Centrifuge modelling of rainfall-induced slope failure in variably saturated soil, Acta Geotechnica, 16(9): 2899-2916, 2021
74. Liu, J., Wang, S., Jiang, M.J., Wu, W., A state-dependent hypoplastic model for methane hydrate-bearing sands, Acta Geotechnica, 16, 77-91, 2021
75. Xiao, Y; He, X; Wu, W; Stuedlein, AW; Evans, TM; Chu, J; Liu, HL; van Paassen, LA; Wu, HR; Kinetic biomineralization through microfluidic chip tests, Acta Geotechnica, 16(10): 3229-3237, 2021
76. Zhan, L., Peng, C., Zhang, B.Y., Wu, W., A surface mesh represented discrete element method (SMR-DEM) for particles of arbitrary shape, Powder Technology, 377, 760-779, 2021
77. Zhang, W; Wang, S; Wu, Y; Wu, W; Bifurcation analysis of shear band in sand under true triaxial conditions with hypoplasticity, Int. J. Numerical and Analytical Methods in Geomechanics, 45(7): 934-949, 2021
78. Zhang, W; Zhong, ZH; Peng, C; Yuan, WH; Wu, W; GPU-accelerated smoothed particle finite element method for large deformation analysis in geomechanics, Computers and Geotechnics, 129, 103856, 2021
79. Zhang, W; Zou, JQ; Zhang, XW; Yuan, WH; Wu, W; Interpretation of cone penetration test in clay with smoothed particle finite element method, Acta Geotechnica, 16(8): 2593-2607, 2021
80. Zhu, CW; Peng, C; Wu, W; Applications of micropolar SPH in geomechanics, Acta Geotechnica, 16(8): 2355-2369, 2021
81. Zhu, CW; Ying, HW; Gong, XN; Wang, X; Wu, W; Analytical solution for wave-induced hydraulic response on subsea shield tunnel, Ocean Engineering, 228, 108924, 2021
82. Zhan, L., Peng, C., Zhang, B.Y., Wu, W., A SPH framework for dynamic interaction between soil and rigid body system with hybrid contact method, Int. J. Numerical and Analytical Methods in Geomechanics, 44, 1446-1471, 2020
83. Wang, S., Wu, W., Zhang, D.C., Kim, J.R., Extension of a basic hypoplastic model for overconsolidated clays, Computers and Geotechnics, 123, 10348, 2020
84. Wang, S., Wang, J.E., Wu, W., Cui, D.S., Su, A.J., Xiang, W., Creep properties of clastic soil in a reactivated slow-moving landslide in the Three Gorges Reservoir Region, China, Engineering Geology, 267, 105493, 2020
85. Lin, J., Bauer, E., Wu, W., A combined method to model grain crushing with DEM, Geosci. Front., 11, 451-459, 2020
86. Liang, J.Y., Lu, D.C., Du, X.L., Wu, W., Ma, C., Non-orthogonal elastoplastic constitutive model for sand with dilatancy, Computers and Geotechnics, 118, 103329, 2020
87. Li, S., Peng, C., Wu, W., Wang, S., Chen, X.Q., Chen, J.G., Zhou, G.G., Chitneedi, B.K., Role of baffle shape on debris flow impact in step-pool channel: an SPH study, Landslides, 17, 2099-2111, 2020
88. Lei, G.P., Wu, W., Centrifuge study on the effect of pile bending stiffness on the slope stabilised by piles, Int. J. Physical Modelling in Geomechanics, 20, 212-223, 2020
89. Ju, H.J., Han, S.J., Kim, K.S., Strauss, A., Wu, W., Multi-potential capacity for reinforced concrete members under pure torsion, Struct. Eng. Mech., 75, 401-41, 2020

90. He, X.Z., Wu, W., Cai, G.Q., Qi, J.L., Kim, J.R., Zhang, D.C., Jiang, M.J., Work-energy analysis of granular assemblies validates and calibrates a constitutive model, Granular Matter, 22, 28, 2020
91. He, X.Z., Wu, W., Wang, S., A constitutive model for granular materials with evolving contact structure and contact forces, Part II: constitutive equations, Granular Matter, 21, 20, 2019
92. He, X.Z., Wu, W., Wang, S., A constitutive model for granular materials with evolving contact structure and contact forces, Part I: framework, Granular Matter, 21, 16, 2019
93. Ju, H.J., Han, S.J., Zhang, D.C., Kim, J., Wu, W., Kim, K.S., Estimation of Minimum Torsional Reinforcement of Reinforced Concrete and Steel Fiber-Reinforced Concrete Members, Adv. Mater. Sci. Eng., 4595363, 2019
94. Liang, J.Y., Lu, D.C., Zhou, X., Du, X.L., Wu, W., Non-orthogonal elastoplastic constitutive model with the critical state for clay, Computers and Geotechnics, 116, UNSP 10320, 2019
95. Lotfalian, M., Nasiri, M., Modarres, A., Wu, W., Slope stability analysis considering weight of trees and root reinforcement, J. Environ. Eng. Landsc., 27, 201-20, 2019
96. Onyelowe, KC; Bui Van, D; Nguyen Van, M; Ezugwu, C; Amhadi, T., Sosa, F., Wu, W., Ta Duc, T., Orji, F., Alaneme, G., Experimental assessment of subgrade stiffness of lateritic soils treated with crushed waste plastics and ceramics for pavement foundation, Int. J. Low-Carbon Tech., 14(2): 187-204, 2019
97. Onyelowe, KC; Bui Van, D; Ubachukwu, O; Ezugwu, C; Salahudeen, B; Nguyen Van, M; Ikeagwuani, C; Amhadi, T; Sosa, F; Wu, W; Ta Duc, T; Eberemu, A; Pham Duc, T; Barah, O; Ikpa, C; Orji, F; Alaneme, G; Amanamba, E; Ugwuanyi, H; Sai, V; Kadurumba, C; Subburaj, S; Ugorji, B; Recycling and reuse of solid wastes; a hub for ecofriendly, ecoefficient and sustainable soil, concrete, wastewater and pavement reengineering, Int. J. Low-Carbon Tech., 14(3): 440-451, 2019
98. Peng, C; Bauinger, C; Szewc, K; Wu, W; Cao, H; An improved predictive-corrective incompressible smoothed particle hydrodynamics method for fluid flow modelling. J. Hydrodyn., 31(4): 654-668, 2019
99. Peng, C; Wang, S; Wu, W; Yu, HS; Wang, C; Chen, JY; LOQUAT: an open-source GPU-accelerated SPH solver for geotechnical modeling, Acta Geotechnica,14(5): 1269-1287, 2019
100. Switala, BM; Wu, W; Wang, S; Implementation of a coupled hydro-mechanical model for root-reinforced soils in finite element code, Computers and Geotechnics, 112: 197-203, 2019
101. Tang, Y; Wu, W; Yin, KL; Wang, S; Lei, GP; A hydro-mechanical coupled analysis of rainfall induced landslide using a hypoplastic constitutive model, Computers and Geotechnics, 112: 284-292, 2019
102. Zhan, L; Peng, C; Zhang, BY; Wu, W; Three-dimensional modeling of granular flow impact on rigid and deformable structures, Computers and Geotechnics, 112: 257-271, 2019
103. Zhan, L; Peng, C; Zhang, BY; Wu, W; A stabilized TL-WC SPH approach with GPU acceleration for three-dimensional fluid-structure interaction. J. Fluid Struct., 86: 329-353, 2019
104. He, XZ; Liang, DF; Wu, W; Cai, GQ; Zhao, CG; Wang, S; Study of the interaction between dry granular flows and rigid barriers with an SPH model. Int. J. Numerical and Analytical Methods Geomech., 42(11): 1217-1234, 2018
105. Motlagh, AT; Ghanbari, A; Maedeh, PA; Wu, W; A new analytical approach to estimate the seismic tensile force of geosynthetic reinforcement respect to the uniform surcharge of slopes. Earthq. Struct., 15(6): 687-699, 2018

106. Switala, BM; Askarinejad, A; Wu, W; Springman, SM; Experimental validation of a coupled hydro-mechanical model for vegetated soil. Géotechnique, 68(5): 375-385, 2018
107. Switala, BM; Wu, W., Numerical modelling of rainfall-induced instability of vegetated slopes. Géotechnique, 68(6): 481-491, 2018
108. Wang, S; Wu, W; Peng, C; He, XZ; Cui, DS; Numerical integration and FE implementation of a hypoplastic constitutive model. Acta Geotechnica, 13(6): 1265-1281, 2018
109. Wang, S; Wu, W; Wang, JG; Yin, Z; Cui, DS; Xiang, W; Residual-state creep of clastic soil in a reactivated slow-moving landslide in the Three Gorges Reservoir Region, China. Landslides, 15(12): 2413-2422, 2018
110. Wang, S; Wu, W; Yin, ZY; Peng, C; He, XZ; Modelling the time-dependent behaviour of granular material with hypoplasticity. Int. J. Numerical and Analytical Methods Geomech., 42(12): 1331-1345, 2018
111. Xu, GF; Wu, W; Kong, LW; Qi, JL; Hypoplastic Modeling for the Mechanical Behavior of Frozen Soil in Stress Path Testing. Int. J. Geomech., 18(6), 2018
112. Maedeh, PA; Wu, W; Ghanbari, A; Lin, J; Al Dianty, M; Ghaffari Irdmoosa, K; Shahraki Ghadimi, A; New study on interactional effects of grouting pressure on the displacement of nailing bond. JME, 6, 10-24, 2018
113. Maedeh, PA; Wu, W; da Fonseca, AV; Irdmoosa, KG; Acharya, MS; Bodaghi, E; A new approach to estimate the factor of safety for rooted slopes with an emphasis on the soil property, geometry and vegetated coverage. Adv. Comput. Des., 3(3): 269-288, 2018
114. Cabrera, MA; Wu, W; Experimental modelling of free-surface dry granular flows under a centrifugal acceleration field. Granular Matter, 19(4), 2017
115. Cabrera, MA; Wu, W; Scale Model for Mass Flows Down an Inclined Plane in a Geotechnical Centrifuge. Geotech. Test. J., 40(4): 719-730, 2017
116. Cabrera, MA; Wu, W; Space-time digital image analysis for granular flows. Int. J. Phys. Modelling Geomech., 17(2): 135-143, 2017
117. Cui, DS; Wu, W; Xiang, W; Doanh, T; Chen, Q; Wang, S; Liu, QB; Wang, JG; Stick-slip behaviours of dry glass beads in triaxial compression. Granular Matter, 19(1), 2017
118. Lin, J; Wu, W; A general rotation averaging method for granular materials. Granular Matter, 19(3), 2017
119. Maedeh, PA; Ghanbari, A; Wu, W; New coefficients to find natural period of elevated tanks considering fluid-structure-soil interaction effects. Geomech. Eng., 12(6): 949-963, 2017
120. Maedeh, PA; Ghanbari, A; Wu, W; Estimation of elevated tanks natural period considering fluid- structure- soil interaction by using new approaches. Earthq. Struct., 12(2): 145-152, 2017
121. Nasiri, M; Lotfalian, M; Modarres, A; Wu, W; Use of rice husk ash as a stabilizer to reduce soil loss and runoff rates on sub-base materials of forest roads from rainfall simulation tests. Catena, 150: 116-123, 2017
122. Peng, C; Xu, GF; Wu, W; Yu, HS; Wang, C; Multiphase SPH modeling of free surface flow in porous media with variable porosity. Computers and Geotechnics, 81: 239-248, 2017
123. Qi, C; Chen, H; Chanyshev, A; Qi, J; Wu, W; Modeling Deformation Wave in Rock Mass near Deep-Level Tunnel. J. Min. Sci., 53(6): 1025-1036, 2017
124. Wu, W; Lin, J; Wang, XT; A basic hypoplastic constitutive model for sand. Acta Geotechnical, 12(6): 1373-1382, 2017
125. Xu, GF; Peng, C; Wu, W; Qi, JL; Combined constitutive model for creep and steady flow rate of frozen soil in an unconfined condition. Canadian Geotech. J., 54(7): 907-914, 2017

126. Maedeh, PA; Ghanbari, A; Wu, W; Investigation of Soil Structure Interaction and Wall Flexibility Effects on Natural Sloshing Frequency of Vessels. Civil Engineering Journal, 3, 45-56, 2017
127. Maedeh, PA; Nasrabadi, T; Wu, W; Al Dianty, M; Evaluation of oil pollution dispersion in an unsaturated sandy soil environment. Pollution, 3, 701-711, 2017
128. Fang, C; Wu, W; Lin, YJ; Chen, YH; Doanh, T; On sintering of tiny glass beads in oscillating diametric compressions. Granular Matter, 18(4), 2016
129. Guo, XG; Peng, C; Wu, W; Wang, YQ; A hypoplastic constitutive model for debris materials. Acta Geotechnca, 11(6): 1217-1229, 2016
130. Lin, J; Wu, W; Asymmetry of the stress tenor in granular materials. Powder Technology, 293: 113-120, 2016
131. Lin, J; Wu, W; A comparative study between DEM and micropolar hypoplasticity. Powder Technology, 293: 121-129, 2016
132. Mathews, JC; Wu, W; Model tests of silo discharge in a geotechnical centrifuge. Powder Technology, 293: 3-14, 2016
133. Nasiri, M; Lotfalian, M; Modarres, A; Wu, W; Optimum Utilization of Rice Husk Ash for Stabilization of Sub-base Materials in Construction and Repair Projects of Forest Roads. Croatian J. Forest. Eng., 37(2): 333-343, 2016
134. Peng, C; Guo, XG; Wu, W; Wang, YQ; Unified modelling of granular media with Smoothed Particle Hydrodynamics. Acta Geotechnica, 11(6): 1231-1247, 2016
135. Xu, GF; Wu, W; Qi, JL; An extended hypoplastic constitutive model for frozen sand. Soils and Foundations, 56(4): 704-711, 2016
136. Xu, GF; Wu, W; Qi, JL; Modeling the viscous behavior of frozen soil with hypoplasticity. Int. J. Numerical and Analytical Methods Geomech., 40(15): 2061-2075, 2016
137. Zak, P; Ashour, T; Korjenic, A; Korjenic, S; Wu, W; The influence of natural reinforcement fibers, gypsum and cement on compressive strength of earth bricks materials. Construct. Build. Mater., 106: 179-188, 2016
138. Zhou, MZ; Zhang, BY; Peng, C; Wu, W; Three-dimensional numerical analysis of concrete-faced rockfill dam using dual-mortar finite element method with mixed tangential contact constraints. Int. J. Numerical and Analytical Methods Geomech., 40(15): 2100-2122, 2016
139. Maedeh, PA; Ghanbari, A; Wu, W; Analytical assessment of elevated tank natural period considering soil effects. Coupled Systems Mech., 5, 223-234, 2016
140. Rauchecker, M; Kühleitner, M; Brunner, N; Scheicher, K; Tintner, J; Roth, M; Wriessnig, K; When do adobe bricks collapse under compressive forces: a simulation approach. Open Journal of Modelling and Simulation, 5, 1-12, 2016
141. Peng, Ch., Wu, W., Yu, H.S., Wang, Ch., A SPH approach for large deformation analysis with hypoplastic constitutive model, Acta Geotechnica, 10, 703-717, 2015
142. Ashour, T., Korjenic, A., Korjenic, S., Wu, W., Thermal conductivity of unfired earth bricks reinforced by agricultural wastes with cement and gypsum, Energy and Buildings, 104, 139-146, 2015
143. Soranzo, E., Tamagnini, R., Wu, W., Centrifuge model tests and numerical analyses on face stability of shallow tunnel, Géotechnique, accepted for publication, 2015
144. Lin, J., Wu, W., Borja, R.I., Micropolar hypoplasticity for persistent shear band in heterogeneous granular materials, Comput. Methods Appl. Mech. Eng., 289, 24-43, 2015
145. Peng, C., Wu, W., Zhang, B.Y., Three-dimensional simulations of tensile cracks in geomaterials by coupling meshless and finite element method. Int. J. Num. Anal. Methods Geomech., 39, 135-154, 2015

146. Fang, C; Wu, W (2014): On the weak turbulent motions of an isothermal dry granular dense flow with incompressible grains: part I. Equilibrium turbulent closure models. Acta Geotech., 9, 725-737, 2014
147. Fang, C., Wu, W., On the weak turbulent motions of an isothermal dry granular dense flow with incompressible grains: part II. Complete closure models and numerical simulations, Acta Geotech., 9, 739-752, 2014
148. Borja, R.I., Song, X., Wu, W., Critical state plasticity. Part VII: Triggering a shear band in variably saturated porous media, Comput. Meth. Appl. Mech. Eng., 261-262 , 66-82, 2013
149. Borja, R.I., Song, X., Rechenmacher, A.L., Abedi, S., Wu, W., Shear band in sand with spatially varying density, J. Mech Phys. Solids, 61, 219-234, 2013
150. Peng, C., Wu, W., Modeling tensile cracking in compacted clay with meshless method, Beton und Stahlbetonbau, 108, 190-195, 2013
151. Lin, J, Wu, W., Numerical study of miniature penetrometer in granular material by discrete element method, Philos. Mag., 92, 3474-3482, 2012
152. Yao, X.L., Qi, J.L., Wu, W., Three dimensional analysis of large strain thaw consolidation in permafrost, Acta Geotech., 7, 193-202, 2012
153. Borja, R.I., White, J.A., Liu, X., Wu, W., Factor of safety in a partially saturated slope inferred from hydro-mechanical continuum modelling, Int. J. Num. Anal. Methods Geomech., 36, 236–248, 2012
154. Ashour, T., Georg, H., Wu, W., Performance of straw bale wall: a case of study, Energy and Buildings, 43, 1960-1967, 2011
155. Ashour, T., Georg, H., Wu, W., An experimental investigation on equilibrium moisture content of earth plaster with natural reinforcement fibres for straw bale buildings, Appl. Thermal Eng., 31, 293-303, 2011
156. Teufelsbauer, H., Wang, Y., Pudasaini, S.P., Borja, R.I., Wu, W., DEM simulation of impact force exerted by granular flow on rigid structures, Acta Geoth., 6, 119-133, 2011
157. Idinger, G., Aklik, P., Wu, W., Borja, R.I., Centrifuge model test on the face stability of shallow tunnel, Acta Geotech., 6, 105-117, 2011
158. Ashour, T., Wieland, H., Georg, H., Bockisch, F.-J., Wu, W., The influence of natural reinforcement fibres on insulation values of earth plaster for straw bale buildings, Materials and Design, 31, 4676-4685, 2010
159. Tejchman, J., Wu, W., Boundary effects on behaviour of granular material during plane strain compression, European J. Mech. A/Solids, 29 (1), 18-27, 2010
160. Tejchman J. and Wu, W., FE-investigations of micro-polar boundary conditions along interface between soil and structure, Granular Matter, 12 (4), 399-410, 2010
161. Teufelsbauer, H., Wang, Y.Q., Chiou, M.C. and Wu, W., Flow-obstacle-interaction in rapid granular avalanches: DEM simulations and comparison with experiments. Granular Matter, 11, 209-220, 2009
162. Osinov, V.A. and Wu, W., Strain-gradient extension of hypoplasticity, Acta Mechanica, 203, 37-47, 2009
163. Osinov, V.A. and Wu, W., Wave speeds, shear bands and the second-order work for incrementally nonlinear constitutive models, Acta Mechanica, 202 (1-4), 145-151, 2009
164. Tejchman, J. and Wu, W., FE-investigation of shear localization in granular bodies under high shear rate, Granular Matter, 11, 115-128, 2009
165. Tejchman, J. and Wu, W., Non-coaxiality and stress-dilatancy rule in dilatant granular materials: FE-investigations within micro-polar hypoplasticity, Int. J. Numer. Anal. Methods Geomech., 33, 117-142, 2009
166. Tejchman, J. and Wu, W., FE-calculations of stress distribution under prismatic and conical sandpiles within hypoplasticity, Granular Matter, 10, 399-405, 2008

167. Wu, W., Wang, X. T. and Aschauer, F., Investigation on failure of a geosynthetic lined reservoir, Geotextiles and Geomembranes, 26, 363-370, 2008
168. Wu, W., Aschauer, F., Reiser, G., Experimental investigation on discontinuities in subsurface barrier installed by the vibrating beam method, ASCE, Journal of Geotechnical and Geoenvironmental Engineering, 134, 541-546, 2008
169. Weingartner B, Osinov V, Wu W, Effect of inherent anisotropy on acceleration wave speeds in hypoplasticity, Int. J. Eng. Sci., 46, 286-292, 2008
170. Wu W, Engineering geomorphology, theory and practice, (book review). Acta Geotechnica, 3 (3), 247-247, 2008
171. Wu W, Wick H, Ferstl F, Aschauer F, A device for tilt table tests on geosynthetic interface in geotechnical centrifuge, Geotextiles and Geomembranes, 26, 31-38, 2008
172. Wang, Y. and W. Wu, Time-dependent magneto-hydrodynamic flow induced by non-coaxial rotations of an oscillating porous plate and a third-order fluid, Mathematical and Computer Modelling, 46, 845-861, 2007
173. Tejchman, J. and Wu, W., Modeling of textural anisotropy in granular materials with stochastic micro-polar hypoplasticity. Int. J. Nonlinear Mech., 42, 882-894, 2007
174. Wang, Y. and Wu, W., Unsteady flow of a fourth grade fluid due to an oscillating plate, Int. J. Nonlinear Mech., 42, 253-262, 2007
175. Tejchman, J., Bauer, E. and Wu, W., Effect of fabric anisotropy on shear localization in sand during plane strain compression, Acta Mechanica, 189, 23-51, 2007
176. Weingartner, B., Osinov, V. and Wu, W., Acceleration wave speeds in a hypoplastic constitutive model, International Journal of Nonlinear Mechanics, 41, 991-999, 2006
177. Wu, W., On high-order hypoplastic models for granular materials, J. Eng. Math., 56, 23-34, 2006
178. Huang, W.X., Wu, W., Sun, D.A. and Scott, S., A simple hypoplastic model for normally consolidated clay, Acta Geotechnica, 1, 15-27,2006
179. Wu, W., Editorial, Acta Geotechnica, 1, 1, 2006
180. Bauer, E., Huang, W. X. and Wu, W., Investigation of shear banding in an anisotropic hypoplastic material, Int. J. Solids Struct., 41, 5903-5919, 2004
181. Wu, W., Nonlinear analysis of shear band formation in sand, Int. J. Numer. Anal. Methods Geomech., 24, 245-263, 2000
182. Wu, W., Rational approach to anisotropy of sand, Int. J. Numer. Anal. Methods Geomech., 22, 921-940, 1998
183. Wu, W. and Niemunis, A., Beyond failure in granular materials, Int. J. Numer. Anal. Methods Geomech., 21, 153-174, 1997
184. Tejchman, J. and Wu, W., Dynamic patterning of shear bands in Cosserat continuum, ASCE, J. Eng. Mech., 123, 123-133, 1997
185. Wu, W., Bauer, E. and Kolymbas, D., Hypoplastic constitutive model with critical state for granular materials, Mech. Mater., 23, 45-69, 1996
186. Wu, W. and Niemunis, A., Failure criterion, flow rule and dissipation function derived from hypoplasticity, Mechanics of Cohesive-Frictional Materials, 1, 145-163, 1996
187. Tejchman, J. and Wu, W., Numerical simulation of shear band formation with hypoplastic constitutive models, Comput. Geotech., 18, 71-84, 1996
188. Bauer, E. and Wu, W., A hypoplastic constitutive model for cohesive powders, Powder Technol., 85, 1-9, 1995
189. Tejchman, J. and Wu, W., Experimental and numerical study on sand-steel interfaces, Int. J. Numer. Anal. Methods Geomech., 19, 513-536, 1995
190. Tejchman J. and Wu, W., Numerical Study on sand and steel interfaces, Mechanics Research Communications, 21, 109-119, 1994
191. Wu W, Bauer E, A simple hypoplastic constitutive model for sand, Int. J. Numer. Anal. Methods Geomech., 18, 833-862, 1994

192. Tejchman J, Wu W, Numerical simulation of shear band patterning in biaxial compression tests, Mechanics Research Communications, 20, 15-24, 1993
193. Tejchman J, Wu W, Numerical study on patterning of shear bands in a Cosserat continuum, Acta Mechanica, 99, 61-74, 1992
194. Wu W, Sikora Z, Localized bifurcation in pressure-sensitive, dilatant granular materials, Mechanics Research Communications, 19, 289-299, 1992
195. Wu W, Sikora Z, Localized bifurcation in hypoplasticity, Int. J. Eng. Sci., 29, 195-201, 1991
196. Wu W, Kolymbas D, On some issues in triaxial extension tests, ASTM, Geotechnical Testing Journal, 14, 276-287, 1991
197. Wu W, Kolymbas D, Numerical testing of the stability criterion for hypoplastic constitutive equations, Mech. Materials, 9, 245-253, 1990
198. Wu W, A unified numerical integration formula for the perfectly plastic von Mises model, Int. J. Numerical Methods Eng., 30, 491-504, 1990
199. Kolymbas D, Wu W., Recent results of triaxial tests with granular materials, Powder Technol., 60, 99-119, 1989
200. Kolymbas D, Wu W, A device for lateral strain measurement in triaxial tests with unsaturated specimens, ASTM, Geotechnical Testing Journal, 12, 227-229, 1989
201. Wu W, Loading criteria for elastoplastic constitutive equations with multi-yield surfaces, Mechanics Research Communications, 16, 133-137, 1989