

# Curriculum vitae of Omid Bayat

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## Research Interests

- (1) Geomorphology, Soils and Paleosols.
- (2) The Dynamics of Inorganic Carbon (Sub-microscopy and Stable Isotope Geochemistry) in the Soils of Arid and Semi-arid Ecosystems.
- (3) The Dynamic of Dust in Arid and Semi-arid Landscapes and Its Role in Soil Formation.
- (4) Reconstruction of Quaternary Environments and Climates Based on Geomorphic and Pedogenetic Proxies.

## Skills and expertise

Pedology and paleopedology, Geomorphology, Geochemistry, Stable isotope geochemistry of carbon and oxygen in pedogenic carbonates, Clay mineralogy, Paleoclimatology.

## Publications

### *Peer-reviewed Journal Papers*

- 12-Mahmodian, F., Karimi, A. and **O. Bayat**, 2022, Soil evolution along an alluvial-loess transect in the Heart Plain, western Afghanistan, *Journal of Arid Land*, 14, 1317-1330.
- 11-Pourali, M., Adel S., Jamshidpour A. and **O. Bayat**, 2022, Granulometry analysis of playa's geomorphic facies (case study: Sabzevar playa, northeastern Iran), *Sedimentary Facies* (in Persian with an extended English abstract) (*Accepted*).

- 10-Sun, Q., Zamanian, K., Huguet, A., **Bayat, O.**, Wang, H. and H. Badawy, 2022, Genesis and soil environmental implication of initial intact rhizoliths in dune soils of the Badain Jaran Desert, northwestern China, *Acta Geochimica*, 41, 811-822.
- 9-**Bayat, O.**, Karimi A. and R. Amundson, 2021, Stable isotope geochemistry of pedogenic carbonates in calcareous materials, Iran: A review and synthesis, pp. 255-272, In: (Bojar, A., Pelc, A. and C. Lecuyer (Eds.), *Stable Isotope Studies of Water Cycle and Terrestrial Environments* , Geological Society of London, Special Publication 507, London, The UK.
- 8-**Bayat, O.** and A. Karimi, 2020, Conceptual and numerical models of the evolution of pedogenic carbonates in soils of arid and semi-arid regions: A review, *Quaternary Journal of Iran* , 6(5), 39-83.
- 7-**Bayat, O.**, Karimzadeh, H. R., Eghbal, M. K., Karimi, A., and R. Amundson, 2018, Calcic soils as indicators of profound Quaternary climate change in eastern Isfahan, Iran, *Geoderma* , 315, 220-230.
- 6-**Bayat, O.** Karimi, A., and H. Khademi, 2017, Stable isotopic geochemistry of pedogenic carbonates in loess-derived soils of northeastern Iran: paleoenvironmental implications and correlation across Eurasia, *Quaternary International* , 429, 52-61.
- 5-**Bayat, O.**, Karimzadeh, H. R., Karimi, A., Eghbal, M. K., and H. Khademi, 2017, Paleoenvironment of geomorphic surfaces of an alluvial fan in the eastern Isfahan, Iran, in the light of micromorphology and clay mineralogy, *Arabian Journal of Geosciences* , 10 (4): 91.
- 4-**Bayat, O.**, Khademi H and H. R. Karimzadeh, 2015, Isotopic thermometry and past climatic reconstruction using paleopedologic evidence in the eastern part of Zayandehrud Watershed, Isfahan, *Journal of Climate Research*, 13/14: 17-30 (In Persian with an Extended English abstract). [ISSN: 2228-5040].
- 3-**Bayat, O.**, Karimzadeh H. R, Eghbal M. and H. Khademi, 2013, Pedogeomorphic evolution of an alluvial fan in Central Iran, *Journal of Range and Watershed Management* , 66(2) : 191-206. (In Persian with an English abstract). [ISSN: 2423-7795].
- 2-**Bayat, O.**, Karimzadeh H. R and H. Khademi, 2011, Clay minerals in two paleosols on geomorphic surfaces in eastern Isfahan, *Iranian Journal of Crystallography and Mineralogy* , Vol. 19(1) : 45-58 (In Persian with an English abstract). [ISSN: 1726-3689].
- 1-**Bayat, O.**, Khademi, H., and H. R. Karimzadeh, 2010, Stable isotopes and paleoecological changes in geomorphic surfaces of eastern Isfahan, *Journal of Science, University of Tehran* , 36(1), 95-102 (In Persian with an English abstract). [ISSN: 1016-1058].

### **Conference Papers**

- 15- **Bayat, O.**, Karimi, A., May, J-H., Wiesenberg, G. and M. Egli, 2023, Late Quaternary aridification in central Iran: Signals from high-resolution distribution of stable isotopes in a palaeosol, **XXI INQUA Congress**, Rome, Italy (accepted) .
- 14-Beheshti, B., Karimi, A., Haghnia, G. H. and **O. Bayat, O** 2021, Micromorphological study of argillic and petrocalcic horizons in a loess- alluvial section, western Mashhad, **Proceeding of 17<sup>th</sup> Soil Congress of Iran**, Soil and Water Research Institute of Iran, Karaj, Iran.

- 13-Bayat, O., Rashidi, Z. and A. Karimi, 2019, Late Quaternary wind erosion in the Segzi Playa, central Iran,: Evidence from soil vesicular horizons, **Proceeding of 16<sup>th</sup> Soil Congress of Iran**, the University of Zanjan, Zanjan, Iran.
- 12-Beheshti, B., Karimi, A., Bayat, O. and G.H. Haghnia, 2019, Pedogenic evidence of Quaternary environmental changes in northeastern Iran as recorded in a loess-alluvial sediment section, **Proceeding of 16<sup>th</sup> Soil Congress of Iran**, the University of Zanjan, Zanjan, Iran.
- 11-Bayat, O. and A. Karimi, 2017, Pedogenetic proxies of the last glacial-interglacial cycle of Quaternary, central and northeastern Iran, p.200-203, **Proceeding of 5<sup>th</sup> National Conference of Iranian Society of Geomorphology, Geomorphology and environmental challenges**, Ferdowsi University of Mashhad, Mashhad, Iran.
- 10-Bayat, O., Karimi, A., Karimzadeh, H. R. and H. Khademi, 2016, Paleoenvironmental implications of clay mineral assemblages in argillic horizons of Iranian aridisols, **Proceeding of 8<sup>th</sup> International Congress of Environmental Research (ICER 16)**, Luebeck University of Applied Sciences , Luebeck, Germany.
- 9-Bayat, O. Karimi A., and M. Kehl, 2016, Impacts of Westerlies on the mid- Holocene isotopic correlation of pedogenic carbonates in northeastern Iran and western Russia, **Proceeding of the 5<sup>th</sup> Regional Conference on Climate Change (5RCCC)**, Tehran, Iran.
- 8-Bayat, O. and H. R. Karimzadeh, 2015, Magnetic evidence in geomorphic evolution of an alluvial fan in eastern Isfahan, **Proceeding of the first International Conference on Geographical Sciences (ICGS 2015)**, Shiraz, Iran.
- 7-Bayat, O., Karimi A., Khademi H. and M. Kehl, 2014, Paleocological changes in the Northeastern Iran, signals from carbon isotopic composition of pedogenic carbonates in loess derived soils, pp.54, **Proceeding of the International Symposium on Loess, Soils and Climate Change in Southern Eurasia, GUASNR Gorgan**, Iran.
- 6-Bayat, O., Karimi A., Khademi H. and M. Kehl, 2013, Paleoclimate of Notheastern Iran as revealed by stable oxygen isotopes in pedogenic carbonates, **Proceeding of the first National Conference on Application of Stable Isotopes**, Ferdowsi University, Mashhad, Iran.
- 5-Bayat, O., Khademi H and H. R. Karimzadeh, 2010, Paleopedologic indicators of Quaternary climatic changes in Eastern Isfahan, pp. 283-288, **Proceeding of The 4<sup>th</sup> Regional Climate Change Conference (4RCCC)**, Tehran, Iran.
- 4-Bayat, O., Karimzadeh H. R and H. Khademi, 2010, Clay mineralogy of pedogenic carbonates in a paleosol in Eastern Isfahan, pp. 198-202, **Proceeding of the 18<sup>th</sup> Symposium of Society of Crystallography and Mineralogy of Iran (18SCM)**, Tabriz, Iran.
- 3-Karimzadeh. H.R., and O. Bayat., 2007, Paleoenvironmental changes in an arid region (Eastern Isfahan, Iran), pp. 80, **Proceeding of International Congress of Environmental Research (ICER07)**, Bhopal, India.

**2-Bayat. O.**, Khademi. H., Karimzadeh. H.R., Eghbal. M.K., and A. Seif., 2006, Geomorphological study of landscapes and soils in the eastern part of Zayandehrud valley, Central Iran, pp. 7, **Proceeding of The Third International Congress of the Islamic World Geographers**, University of Isfahan, Isfahan, Iran.

**1-Bayat. O.**, Khademi. H., and H.R. Karimzadeh, 2005, Pedogenic indicators of paleoclimate in an arid region, pp. 249-260, **Proceeding of First Iran-Korea Joint Workshop on Climate Modeling**, Mashhad, Iran.

## **Reviewing for International Journals**

Palaeogeography, Palaeoclimatology, Palaeoecology.

Physical Geography.

Carbonates and Evaporates

## **Research Projects**

**Bayat, O.**, Karimi, A. and Q. Sun, 2022, Geochemistry, microscopy and environmental implications of carbonate rhizoliths in the Shahre Kord Plain, central Zagros, Department of Soil Science, Ferdowsi University of Mashhad (FUM Grant No. 1/57722).

**Bayat, O.**, Karimi, A., May, J-H. and M. Egli, 2020, High-resolution geochemical and clay mineralogical study of a relict paleosol in central Iran, Department of Soil Science, Ferdowsi University of Mashhad, Mashhad, Iran (FUM Grant No. 2/52230).

**Bayat, O.**, Karimi, A., May, J-H. and M. Egli, 2020, Study of vesicular horizons around the Sejzi Playa, Isfahan, central Iran, Department of Soil Science, Ferdowsi University of Mashhad, Mashhad, Iran (FUM Grant No. 2/52231).

Karimzadeh H. R., and **O. Bayat**, 2008, Land evaluation of the Hannah watershed, Isfahan Province, Isfahan University of Technology and Isfahan Department of Environment, (in Persian).

**Bayat O.**, Eghbal, M. K., and Karimi A., 2003, Soil survey of Gardaneh Rokh, Shahre Kord, Chaharmahal Province, Isfahan Univeristy of Technology, (in Persian).

## **Collaboration with Theses and Dissertations**

Beheshti, B., 2022, Pedogenesis and development of petrocalcic and argillic horizons in granitic hills, Mashhad , Msc Thesis, Ferdowsi University of Mashhad, Mashhad, Iran. **(Official Advisor)**.

Pourali, M., 2020, Late Quaternary geomorphic evolution of the Sabzevar Playa using depositional records and mineral composition, PhD Dissertation, Ferdowsi University of Mashhad, Mashhad, Iran.

Rashidi, Z., 2019, Reconstruction of pedogenesis periods and paleoclimate of the Late Pleistocene and Holocene in Iranian Plateau, PhD Dissertation, Ferdowsi University of Mashhad, Mashhad, Iran.

### **Research Assistance**

Ferdowsi University of Mashhad, Mashhad, Iran  
(2012-2022)  
Espadana Baspar Co., Isfahan, Iran (2010-2015).

### **Teaching Assistance**

*Course* : “*Soil and Land Resources* ”, Department of Natural Resources, Isfahan University of Technology, (Coordinated by Dr. H. R. Karimzadeh), June 2011, 2012, 2017 and 2018.

### **References**

#### **Prof. Dr. M. Egli**

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