



KTH Civil and Architectural Engineering

Soil and Rock Mechanics



CURRICULUM VITAE

Fredrik Johansson
Associate Professor
Born: 1973

Department of Civil and Architectural Engineering
School of Architecture and the Built Environment
KTH Royal Institute of Technology
SE-100 44 STOCKHOLM
Sweden

Phone: +46 (0)8-790 79 91
Email: fredrik.johansson@byv.kth.se
<http://www.kth.se/abe/inst/byv/>

CURRENT POSITIONS

2012 - present Associate Professor of the Division of Soil- and Rock Mechanics, Department of Civil and Architectural Engineering, School of Architecture and the Built Environment, KTH Royal Institute of Technology (Part time 80%). Senior Consultant Rock Engineering, AECOM Nordic (Part time 20%)

EDUCATION

2017 Docent Rock Mechanics KTH Royal Institute of Technology, Stockholm
2010 PhD (Soil and Rock Mechanics) KTH Royal Institute of Technology, Stockholm
2000 M.Sc in Civil Engineering, KTH Royal Institute of Technology.
1994 Diploma in Construction Engineering, KTH Royal Institute of Technology

PREVIOUS EMPLOYMENT

2018 - Associate Professor, Division of Soil and Rock Mechanics, Department of Civil and Architectural Engineering, KTH (Part time 80%), Senior Consultant Rock Engineering, AECOM Nordic (Part time 20%)
2012 - 2017 Assistant Professor, Division of Soil and Rock Mechanics, Department of Civil and Architectural Engineering, KTH (Part time 80%), Senior Consultant Hydropower and Dams, Sweco Infrastructure (Part time 20%)
2010 - 2011 Researcher, Division of Soil and Rock Mechanics, Department of Civil and Architectural Engineering, KTH (Part time 50%), Senior Consultant Hydropower and Dams, Sweco Infrastructure (Part time 50%)
2003 - 2009 PhD Student, KTH, Stockholm, (Part time 80%), Consultant Hydropower and dams, Sweco Infrastructure (Part time 20%).
2000 - 2002 Consultant Hydropower and dams, Sweco Infrastructure
1994 - 1996 Consultant Hydropower and dams, Sweco Infrastructure

COMMISSIONS OF TRUST

2017 - 2019 President of the Committee for the Rock Days, Swedish Rock Engineering Association
2013 - present President of the board for the Swedish national group of rock mechanics, country member in ISRM, the International Society for Rock Mechanics, since 2011



<http://www.svebefo.se/isrm/index.php?id=0&language=svenska>

- 2011 - present Member of the programme board for the Swedish Rock Engineering Research Foundation, <http://www.befoonline.org/web/Organization.aspx>
- 2010 - present Member of the advising committee in Swedcold, the Swedish national committee in ICOLD, the International Commission of Large Dams.
<http://www.swedcold.org/en-index.html>
- 2009 - present Member of the steering committee for the Swedish hydropower centre, SVC, in the area of hydropower construction, <http://www.elforsk.se/SVC/Om-SVC/>

TEACHING AT PRESENT

- Rock Mechanics, AF2602, Course responsible and examiner. (Year 4, app. 45 stud).
- Theory and Methodology of Science and Risk and Safety in Building Sciences, AF2023, Year 5, app. 100 stud). Responsible for the part Risk and Safety in Building Sciences.
- Soil Mechanics and Foundation Engineering, AF1601. Responsible for the part Slope stability (Year 3, 75 stud).
- Foundation engineering, AF2609 (Year 4, app. 85 students). Responsible for the part stability of dam foundations.

Total number of supervised diploma works and master's projects: >20 students.

SUPERVISION OF DOCTORAL STUDENTS

- 2019 -- present Suihan Zhang (Main supervisor). Design of grout curtains for new and existing dams.
- 2018 - present Davi Rodrigues Damasceno (Main supervisor). Possibilities and challenges related to underground storage of hydrogen in hard rock
- 2017 - present Jörgen Larsson (Main supervisor). Experimental and theoretical study of the scale effect for mechanical parameters of rock joints
- 2017 - present Francisco Rios Bayona (Assistant Supervisor). Analytical and numerical analyses for estimation of peak shear strength of rock joints.
- 2016 - present Dipen Bista, NTNU (Assistant Supervisor). Stable dams.
- 2014 - present William Bjureland (Main Supervisor). Design of rock support according to Eurocode with reliability based methods.
- 2013 - 2014 Pin Zhou (Assistant Supervisor). The Use of the Continuity Factor as a Tool to Represent Representative Elementary Volume in Rock Engineering Design. Tech.Lic 2014.
- 2012 - 2016 Johan Spross (assistant supervisor). PhD 2016. Project: The observational method and reliability-based design.
- 2012 - 2016 Alexandra Krounis Guerrero (main supervisor). PhD 2016. Project: Shear strength in the interface between concrete and rock for dams.

SOME REPRESENTATIVE PUBLICATIONS

F. Johansson & H. Stille, "[A conceptual model for the peak shear strength of fresh and unweathered rock joints.](#)" *International Journal of Rock Mechanics and Mining Sciences*, vol. 69, s. 31-38, 2014.

F. Johansson, "[Influence of scale and matedness on the peak shear strength of fresh, unweathered rock joints.](#)" *International Journal of Rock Mechanics and Mining Sciences*, vol. 82, s. 36-47, 2016.

A. Krounis, F. Johansson & S. Larsson, "[Shear strength of partially bonded concrete-rock interfaces for application in dam stability analyses](#)" *Rock Mechanics and Rock Engineering*, 2016, 49.7: 2711-2722.

Spross, J. & Johansson F. "[When is the observational method in geotechnical engineering favorable?](#)" *Structural safety*, 2017, 66: 17-26.

A. Krounis, F. Johansson, J. Spross, S. Larsson, "[Influence of cohesive strength in probabilistic sliding stability reassessment of concrete dams](#)" *Journal of Geotechnical and Geoenvironmental Engineering*, 2016, 143.2: 04016094.
