Prof. Dr Stéphane Commend
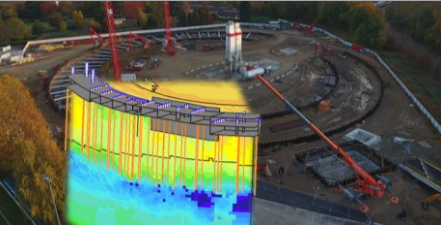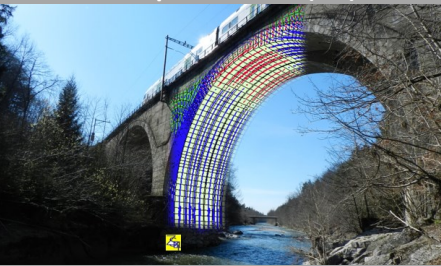
Born 1971, swiss citizen
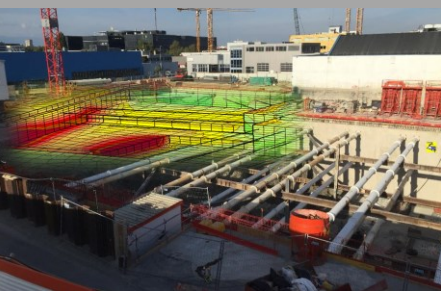
Contact

Tel: +41 79 786 96 22

stephane.commend@hefr.ch
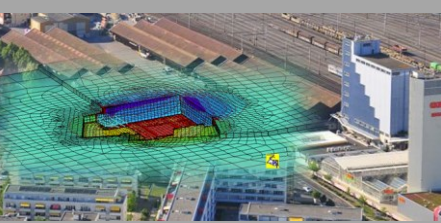scommend@geomod.ch

References

**Vortex pile foundation design
Chavannes-près-Renens (VD)**

**Senseviadukt rehabilitation
Thörishaus (FR-BE)**

**L'Atelier excavation works
Plan-les-Ouates (GE)**

**CEOL excavation works
Renens (VD)**

Experience

2017 -

Associate Professor
HEIA-FR, HES-SO Fribourg
Teaching activities: material technology, material lab, geomechanical finite element analysis, concrete structures, images and construction
Coordinator for interdisciplinary activities (architecture – civil engineering – technical school of construction)
Expertises for arbitration and dispute resolution in the soil-structure interaction field
Research domains of interest: numerical modeling of special works, probabilistic analysis of risk and failure in geomechanics, machine learning applied to geotechnical engineering

2002 -

CEO
GeoMod ingénieurs conseils SA
Director and board member of GeoMod Suisse (2002 -)
Board member of GeoMod France (2018 -)
Verification and design of large urban excavations in Paris, Geneva, Lausanne, Bern (2002 -)
Superficial and deep foundation analyses for large industrial or commercial buildings (2002 -)
Retaining walls verification on swiss highways (2005 - 2015)
CEVA railway in Geneva: numerical modeling of underground stations and tunnels (2006 - 2017)
Riedberg tunnel finite element analyses and expertise (2005 - 2011)
Seismic analyses of dams and bridges: Vieux-Emosson dam, Marécottes basin, Châtelard earthdam, Veveyse de Fégire bridge, Brena viaduct (2006 - 2012)

2001 - 2002

Engineer
De Cérenville Géotechnique SA
Head of the numerical modeling team
3D finite element analysis of the Rolex-PLO excavation, Geneva
3D finite element analysis of the Frasse landslide, swiss alps

1994 - 1997

Research engineer
ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE - EPFL
Nonlinear two-phase finite element analysis software development for underground structure failure analyses (ZTUNNEL / ZSOIL)
Structural dynamics II course teaching assistant
Scientific advisor for private companies using the ZSOIL software

Education

1997 - 2001

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE - EPFL
PhD degree, subject: Stabilized finite element in geomechanics
Including a one-year stay at Prof. T. Hughes institute, Stanford University

1989 - 1994

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE - EPFL
Civil Engineer degree

Prof. Dr Stéphane Commend

Born 1971, swiss citizen

Affiliations

SIA Vaud: board member (2016 -)

SIA Vaud: president of the group of engineers (2017 - 2019)

SGEB: member (2008 -)

Languages

French - mother tongue

English - C1

German - B2

Spanish - B2

Contact

+41 79 786 96 22

stephane.commend@hefr.ch
scommend@geomod.ch

Publications

Prediction of unsupported excavations behaviour with machine learning techniques, S. Commend, S. Wattel, J. Hennebert, P. Kuonen, L. Vulliet in Proceedings XIV Int. Conf. on Computational Plasticity, Barcelona, 2019

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3D finite element seismic analyses of bridges and dams, A. Mellal, S. Commend, F. Geiser, Proceedings of the 10th International Symposium on Numerical Models in Geomechanics, NUMOG X, Greece, April 25-27, G. N. Pande & S. Pietruszczak (Eds.), pp. 673-678, 2007

3D numerical modelling of a landslide in Switzerland, S. Commend, F. Geiser, L. Tacher, Proc. NUMOG IX, Ottawa, 2004

Stabilized finite elements applied to elastoplasticity: I. Mixed displacement-pressure formulation, S. Commend, A. Truty, Th. Zimmermann, Computer methods in applied mechanics and engineering 193, pp 3559-3586, 2004

Numerical simulation of earthworks and retaining system for a large excavation, S. Commend, F. Geiser, J. Crisinel, Advances in Engineering Software 35, pp 669-678, 2004

Aspects of nonlinear numerical simulations for dam constructions, S. Commend, Th. Zimmermann, J.L. Sarf, E. Davalle, Hydropower and Dams (4), 2002

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Object-oriented nonlinear finite element programming: a primer, S. Commend, T. Zimmermann, in Advances in Engineering Software 32, pp 611-628, 2001

Finite Element Stability Analyses of Natural Caves, A. Bisetti, D. Tendon, Th. Zimmermann & S. Commend, EUROCK 2001, Helsinki, 2001