Benoît Pardoen

Associate scientist in geomechanics
PhD in Engineering Sciences and geomechanics

ENTPE, Ecole Nationale des Travaux Publics de l'Etat.
LTDS, Laboratoire de Tribologie et Dynamique des Systèmes, UMR CNRS 5513.
GCD, Géo-matériaux et Constructions Durables.

3 rue Maurice Audin,
69120 Vaulx-en-Velin, France
Phone : +33 4 72 04 82 37
E-mail : benoit.pardoen@entpe.fr

Born on the 9th December 1985, Belgian

FORMATION AND PROFESSIONAL EXPERIENCE

Actual	Associate scientist in mechanics / civil engineering / **tunnels and underground works**. Ecole Nationale des Travaux Publics de l'Etat (ENTPE). Laboratoire de Tribologie et Dynamique des Systèmes (LTDS, UMR CNRS 5513). Géo-matériaux et Constructions Durables (GCD).
2018-2019	Associate Professor in **geotechnical engineering** at Université catholique de Louvain (UCL). Louvain School of Engineering (EPL). Institute of Mechanics, Materials, and Civil Engineering (iMMC). Civil and environmental engineering (GCE).
2017	Postdoctoral research at CNRS, Université Grenoble Alpes, Laboratoire 3SR, Grenoble, France. Subject: **Accounting for the spatial variability of argillite's properties through a multi-scale numeric-experimental approach**, Project: NEEDS MiPor, CNRS, France. Supervisors: Pierre Bésuelle, Stefano Dal Pont, Jacques Desrues, Philippe Cosenza.
2016	Postdoctoral research at Université Laval, Québec, Canada. Subject: **Numerical modelling of interfaces in rockfill dams**. Project: Industrial Research Chair CRSNG / Hydro-Québec, Canada. Supervisor: Pr. Jean-Marie Konrad.
2014-2015	Private teaching in higher education, SA Cogito, Brussels, Belgium.
2011-2015	PhD thesis in geomechanics at University of Liège, ULg, Belgium (GEO³ sector, ArGEnCo dep.). Scholarship: FRIA, F.R.S.-FNRS scholarship holder, Brussels, Belgium. Title: "**Hydro-mechanical analysis of the fracturing induced by the excavation of nuclear waste repository galleries using shear banding**." Defense: 16 November 2015, ULg, Liège, Belgium. PhD jury: Angélique Léonard, Professor ULg, Belgium, president Frédéric Collin, associate Professor, ULg, Belgium, PhD director Robert Charlier, Professor, ULg, Belgium Bertrand François, associate Professor, ULB, Belgium Séverine Levasseur, PhD research engineer, Ondraf/Niras, Belgium Frédéric Nguyen, associate Professor, ULg, Belgium Darius M. Seyedi, PhD research engineer, Andra, France Jian-Fu Shao, Professor, Université Lille 1, France Richard Wan, Professor, University of Calgary, Canada

2009-2011 Geotechnical engineer, geo-engineering department at Tractebel Engineering, GDF SUEZ group, Brussels, Belgium.

Function: Earthworks and soil decontamination studies, geomaterials quality supervisor for high-speed rail line.

2004-2009 Bachelor and Master degrees in civil engineering, specialization in geotechnics, Université catholique de Louvain, UCL, Belgium. Graduating with High Honors (*magna cum laude*).

Master thesis title: "Interpretation of dynamic pile load test results: reliability and dispersion.".
Supervisor: Pr. Alain Holeyman, UCL (GCE sector).
Scholarship: Responsabilité Sociale de l'Entreprise (RSE), GDF SUEZ group.

2003-2004 Study abroad program, Crescent School District, Joyce, Washington state, USA.

1997-2003 High school, mathematical-sciences-languages orientation, C.E.P.E.S., Jodoigne, Belgium. Graduating with High Honors (*magna cum laude*), first prize in mathematics.

AWARDS AND INVITED LECTURES

PhD prizes:
- Laureate of the Pierre Londe prize 2016, Comité Français de Mécanique des Roches, CFMR, France.
- Laureate of the McKinsey & Company Prize 2016, FNRS, Belgium.
- Laureate of the Jacques Verdeyen prize of soil mechanics (period 2014-2018), Bureau de Contrôle Technique pour la Construction SECO, Belgium.
- Finalist of the ALERT Ioannis Vardoulakis PhD prize 2016, France.

Invited lectures:
- Considering heterogeneity of argillaceous rock microstructure in a FEMxFEM double scale model. Short courses on Challenges and Innovations in Geomechanics, Mechanics of geomaterials: from micro to macro, IACMAG, 2020, Grenoble, France.
- Journée Scientifique & Technique CFMS-CFMR, Microstructure de sols et des roches argileux-conséquences pour l'ingénieur, P. Cosenza, P. Delage, 2018, CNAM, Paris, France.
- Pierre Londe prize. (1) Awards ceremony 2016 of CFMR and (2) Journées Nationales de Géotechnique et de Géologie de l'Ingénieur 2018 (JNGG2018). Co-organised by Ifsttar and Ecole des Ponts ParisTech (ENPC), Paris, France.
- McKinsey annual awards ceremony, 2016, FNRS, Brussel, Belgium.
- Jacques Verdeyen prize awards ceremony, 2019, SECO, Brussel, Belgium.

FUNDED RESEARCH PROJECTS

Submitted Impulsion 2020, IDEX Lyon. "Comportement multi-échelle et endommagement des roches hétérogènes autour d'excavations souterraines". Research and postdoc funding, 57.000€.

Submitted ANR JCJC 2020. Multi-Scale numerical analysis of damage in heterogeneous rocks applied to underground works. Research and PhD funding, 212.000 €.

2019 CDR-FNRS-18. "Multi-scale analysis of heterogeneous behaviour and strength of rocks", 55.730€.

2018 UCL Seed funding FSR 2017. "Influence of inherent rock heterogeneity and properties variability on underground rupture based on a multi-scale hydro-mechanical numerical approach", PhD funding, 78.000€.

PUBLICATIONS

Articles in international journals:

[1] Pardoen, B., Bésuelle, P., Desrues, J., Dal Pont, S., Cosenza, P. (2019). Accounting for small-scale heterogeneity and variability of argillite in homogenised numerical micromechanical response and microcracking. Rock Mechanics and Rock Engineering, under revision.

[2] Collin, F., Kotronis, P., & Pardoen, B. (2019). Numerical Modeling of Multiphysics Couplings and Strain Localization. Book chapter 7 in "Instabilities Modeling in Geomechanics", SCIENCES, ISTE (Eds. J. Sulem, I. Stefanou, G. Pijaudier-Cabot). In press.

[3] Collin, F., Kotronis, P., & Pardoen, B. (2019). Modélisation numérique de couplages multiphysiques et de la localisation des déformations. 27th ALERT Doctoral School 2016. Book chapter 6 in "Modélisation des instabilités en géomécanique" and "Géomécanique" traité SCIENCES, ISTE (Eds. J. Sulem, I. Stefanou, G. Viggiani et G. Pijaudier-Cabot). In press.

[4] Pardoen, B., & Konrad, J-M. (2019). Numerical Modeling of Zoned Rockfill Dam during Construction Considering Granular Interface Behavior. Journal of Geotechnical and Geoenvironmental Engineering (ASCE). 145(3), doi: 10.1061/(ASCE)GT.1943-5606.0001997.

[5] Pardoen, B., & Collin, F. (2017). Modelling the influence of strain localisation and viscosity on the behaviour of underground drifts drilled in claystone. Computers and Geotechnics, 85:351-367, doi: 10.1016/j.compgeo.2016.05.017.

[6] Pardoen, B., Talandier, J., & Collin, F (2016). Permeability evolution and water transfer in the excavation damaged zone of a ventilated gallery. International Journal of Rock Mechanics and Mining Sciences, 85:192-208. doi: 10.1016/j.ijrmms.2016.03.007.

[7] Pardoen, B., Seyedi, D. M., & Collin, F. (2015). Shear banding modelling in cross-anisotropic rocks. International Journal of Solids and Structures, 72:63-87. doi: 10.1016/j.ijsolstr.2015.07.012.

[8] Pardoen, B., Levasseur, S., & Collin, F. (2015). Using Local Second Gradient Model and Shear Strain Localisation to Model the Excavation Damaged Zone in Unsaturated Claystone. Rock Mechanics and Rock Engineering, 48(2):691-714. doi: 10.1007/s00603-014-0580-2.

[9] Charlier, R., Collin, F., Pardoen, B., Talandier, J., Radu, J. P., & Gerard, P. (2013). An unsaturated hydro-mechanical modelling of two in-situ experiments in Callovo-Oxfordian argillite. Engineering Geology, 165:46-63. doi: 10.1016/j.enggeo.2013.05.021.

PhD thesis:

[10] Pardoen, B. (2015). Hydro-mechanical analysis of the fracturing induced by the excavation of nuclear waste repository galleries using shear banding. PhD thesis, Faculty of Applied Sciences, University of Liège, Liège, Belgium.

Proceedings of scientific conferences, papers published in books:

[11] Pardoen, B., Bésuelle, P., Dal Pont, S., Cosenza, P., Desrues, J. (2020). Effect of claystone small-scale characteristics on the variability of micromechanical response and on microcracking modelling. 6th International Conference of the International Association for Computer Methods and Advances in Geomechanics (IACMAG).

[12] Pardoen, B., Dal Pont, S., Desrues, J., Bésuelle, P., Prêt, D., & Cosenza, P. (2018). Heterogeneity and Variability of Clay Rock Microstructure in a Hydro-Mechanical Double Scale FEM × FEM Analysis. In: Giovine P., Mariano P., Mortara G. (eds) Micro to MACRO Mathematical Modelling in Soil Mechanics (pp. 247-256). Trends in Mathematics. Birkhäuser, Cham, Springer. doi: 10.1007/978-3-319-99474-1_25.

[13] Collin, F., Kotronis, P., & Pardoen, B. (2016). Numerical modelling of Multiphysics couplings and strain localization. In Book: ALERT Doctoral School 2016, Modelling of instabilities and bifurcation in Geomechanics, Alert Geomaterials, The Alliance of Laboratories in Europe for Education, Research and Technology (pp. 247-292).

[14] Collin, F., Talandier, J., & Pardoen, B. (2016). Modelling an in-situ ventilation test in the Andra Underground Research Facilities. 3rd European Conference on Unsaturated Soils, E-UNSAT 2016 (pp. 1-8). doi: http://dx.doi.org/10.1051/e3sconf/20160904003.

[15] Pardoen, B., Levasseur, S., & Collin, F. (2015). Using shear strain localisation to model the fracturing around gallery in unsaturated Callovo-Oxfordian claystone. In K. T., Chau & J., Zhao (Eds.), Bifurcation and Degradation of Geomaterials in the New Millennium. Springer Series in Geomechanics and Geoengineering (pp. 285-291). Springer. doi: 10.1007/978-3-319-13506-9_41.

[16] Pardoen, B., Levasseur, S., & Collin, F. (2014). Excavation damaged zone modelling including hydraulic permeability evolution in unsaturated argillaceous rock. In N., Khalili, A. R., Russell, & A., Khoshghalb (Eds.), Unsaturated Soils: Research & Applications (pp. 1387-1393). CRC Press, Taylor and Francis Group, London, UK. doi: 10.1201/b17034-203.

[17] Collin, F., & Pardoen, B. (2013). Excavation damaged zone modelling in claystone with coupled second gradient model. In Q., Yang, J. M., Zhang, H., Zheng, & Y., Yao (Eds.), Constitutive Modeling of Geomaterials, Advances and applications, Springer Series in Geomechanics and Geoengineering (pp. 313-317), Berlin Heidelberg. Springer. doi: 10.1007/978-3-642-32814-5_42.

[18] Pardoen, B., Talandier, J., Charlier, R., Collin, F., & Radu, J.-P. (2012). Hydro and Hydro-Mechanical Modelling of Ventilation Test in Clayey Rocks. In C., Mancuso, C., Jommi, & F., D'Onza (Eds.), Unsaturated Soils: Research and Applications (pp. 325-332). Springer, Heidelberg, Germany. doi: 10.1007/978-3-642-31343-1_41.

[19] Pardoen, B., Talandier, J., Charlier, R., Collin, F., & Radu, J.-P. (2012). Modélisation numérique d'un essai de ventilation in situ. In F., Skoczylas, C. A., Davy, F., Agostini, & N., Burlion (Eds.), Propriétés de transfert des géomatériaux, Transfert 2012 (pp. 420-428), Ecole centrale de Lille 20-22 mars 2012, ISBN 978-2-915913-29-3.

Research reports:

[20] Pardoen, B., & Konrad, J.-M. (2016). Modélisation numérique des interfaces dans les barrages en enrochement. Université Laval, Québec, Canada.

[21] Charlier, R., Pardoen, B., Salehnia, F., Dieudonné, A.-C., Collin, F., & Dupuis, H. (2016). Modelling the behaviour of host rock for nuclear waste. Reflexions, le site de vulgarisation de l'Université de Liège. ULg, Belgium. url: http://reflexions.ulg.ac.be/cms/c_410969/en/modelling-the-behaviour-of-host-rock-for-nuclear-waste.

[22] Pardoen, B., Collin, F., Levasseur, S., & Charlier, R. (2014). Andra - GL Geomechanics - Transversal action " Models " Phase 3 : Underground structure modelling. ULg, Liège, Belgium.

[23] Pardoen, B., Collin, F., Levasseur, S., & Charlier, R. (2013). Andra - GL Geomechanics - Transversal action " Models " Phase 2 : Test cases with simple loading paths. ULg, Liège, Belgium.

[24] Collin, F., Charlier, R., Radu, J.-P., & Pardoen, B. (2012). Test de fondation filante avec la loi Cam-Clay pour EDF. Comparaison Lagamine – Code_Aster. ULg, Liège, Belgium.

[25] Pardoen, B., Charlier, R., & Radu, J.-P. (2011). Modélisation numérique de l'expérience SDZ pour l'Andra. ULg, Liège, Belgium.

[26] Pardoen, B. (2009). Interprétation des résultats de l'essai de chargement dynamique de pieux : fiabilité et dispersion. Mémoire de Maîtrise, Ecole polytechnique de Louvain, Université catholique de Louvain, Louvain-la-Neuve, Belgium.

RESEARCH COMMUNICATIONS

Oral presentations and posters in scientific conferences:

[27] Pardoen, B., Collin, F., Bésuelle, P., Charlier, R., Dal Pont, S., Cosenza, P., Desrues, J. (2020). Modelling the multiscale behaviour of claystone: deformation, rupture, and hydromechanical phenomena around underground galleries. 2nd International Conference on Energy Geotechnics, La Jolla, California, USA.

[28] Pardoen, B., Bésuelle, P., Dal Pont, S., Cosenza, P., Desrues, J. (2020). Considering the microstructural characteristics of heterogeneous argillaceous rock in a double-scale numerical modelling. 8th International Conference on Clays in natural and engineered barriers for radioactive waste confinement, Nancy, France.

[29] Dansereau V., Pardoen B., Bésuelle P., Dal Pont S., Desrues J. (2019). Double-scale FEM modelling applied to clay rocks. 15th International Conference on Computational Plasticity, COMPLAS 2019, Barcelona, Spain.

[30] Bésuelle P., Pardoen B., Dansereau V., Dal Pont S., Desrues J. (2019). Double-scale hydro-mechanical modelling of clay rocks. Joint GeoMech-M2UN workshop on Upscaling for Strategic Materials, Montpellier, France.

[31] Collin F., Charlier R., Pardoen B. (2019). Rôle de la zone endommagée sur la convergence des galeries de stockage, modélisation numérique d'expériences dans le laboratoire souterrain de Bure. Journée d'étude SBGIMR "Le stockage géologique de déchets nucléaires", Liège, Belgium.

[32] Pardoen B., Bésuelle P., Desrues J., Dal Pont S., & Cosenza P. (2018). Prise en compte de l'hétérogénéité microstructurale des roches argileuses au travers d'un modèle hydromécanique à double échelle. Journée Scientifique & Technique CFMS-CFMR, «Microstructure de sols et des roches argileux – conséquences pour l'ingénieur» , P. Cosenza, P. Delage, CNAM, Paris, France.

[33] Pardoen, B. (2018). Hydro-mechanical analysis of the fracturing induced by the excavation of nuclear waste repository galleries using shear banding. Invited speaker, Prix Pierre Londe CFMR 2016. Journées Nationales de Géotechnique et de Géologie de l'Ingénieur (JNGG2018). Co-organised by Ifsttar and Ecole des Ponts ParisTech (ENPC), Marne-la-Vallée, France.

[34] Bésuelle, P., Pardoen, B., Desrues, J., Dal Pont, S., & Cosenza, P. (2018). Argillaceous rock microstructure considering variability and heterogeneity for double scale modelling with hydro-mechanical coupling. 16th European Mechanics of Materials Conference (EMMC16), Ecole Centrale of Nantes and GeM Institute, Nantes, France.

[35] Pardoen, B., Bésuelle, P., Desrues, J., Dal Pont, S., & Cosenza P. (2018). Accounting for microstructure heterogeneity of clay rocks in a hydro-mechanical double scale model. Second International Workshop on the Finite Element Code LAGAMINE (LAGASHOP 2018). TU Delft, the Netherlands.

[36] Pardoen, B., Bésuelle, P., Desrues, J., & Dal Pont, S. (2018). Double-scale modelling of the hydro-mechanical behaviour of a clay rock including the effect of the microstructure. Workshop on Advanced modelling in particulate and cohesive materials, GDRI GeoMech, Lyon, France.

[37] Pardoen, B., Dal Pont, S., Desrues, J., & Bésuelle., P. (2017). Variability of the microstructure in a double scale model for hydro-mechanical coupling in clay rocks. 7th International Conference on Clays in Natural and Engineered Barriers for Radioactive Waste Confinement, Davos, Switzerland.

[38] Collin, F., Kotronis, P., & Pardoen, B. (2016). Numerical modelling of Multiphysics couplings and strain localization. Doctoral course presented at the 27th ALERT Doctoral School 2016, Alert Geomaterials, The Alliance of Laboratories in Europe for Education, Research and Technology, Aussois, France.

[39] Collin, F., Talandier, J., & Pardoen, B. (2016). Modelling an in-situ ventilation test in the Andra Underground Research Facilities. Paper presented at the 3rd European Conference on Unsaturated Soils, E-UNSAT 2016, Paris, France.

[40] Charlier, R., Collin, F., Pardoen, B., Salehnia, F. (2015). Numerical modelling of shear banding around openings in clayey rocks. Application to URL dedicated to nuclear waste disposals. SEG conference, Barcelona, Spain.

[41] Pardoen, B., Levasseur, S., Collin, F., & Seyedi, D. M. (2015). Modelling the excavation damaged zone in Callovo-Oxfordian claystone using shear strain localisation. Paper presented at the international conference Clays In Natural And Engineered Barriers For Radioactive Waste Confinement. Brussels, Belgium.

[42] Pardoen, B., Collin, F., & Talandier, J. (2015). Modelling of large-scale in situ ventilation test in clayey rock. Poster session presented at the international conference Clays In Natural And Engineered Barriers For Radioactive Waste Confinement. Brussels, Belgium.

[43] Pardoen, B., Levasseur, S., & Collin, F. (2014). Using shear strain localisation to model the fracturing around gallery in unsaturated Callovo-Oxfordian claystone. Paper presented at the 10th International Workshop on Bifurcation and Degradation in Geomaterials, Hong Kong, China.

[44] Pardoen, B., Levasseur, S., & Collin, F. (2014). Excavation damaged zone modelling including hydraulic permeability evolution in unsaturated argillaceous rock. Paper presented at the 6th International Conference on Unsaturated Soils, UNSAT 2014, Sydney, Australia.

[45] Pardoen, B., Levasseur, S., & Collin, F. (2013). Damage zone modelling due to underground drilling in unsaturated argillaceous rock with shear strain localisation. Poster session presented at the 24th ALERT Workshop, Aussois, France.

[46] Pardoen, B., Levasseur, S., Collin, F., & Radu, J.-P. (2013). Excavation damaged zone modelling with shear strain localisation in claystone. Paper presented at LAGASHOP 2013, First International Workshop on the Finite Element code LAGAMINE, Liège, Belgium.

[47] Pardoen, B., Levasseur, S., & Collin, F. (2013). Modelling the excavation damaged zone in claystone with strain localisation using coupled second gradient model and the influence of gallery ventilation. Paper presented at UNSAT WASTE, International Symposium on Unsaturated Soil Mechanics and Deep Geological Nuclear Waste Disposal, Shanghai, China.

[48] Pardoen, B., Collin, F., Levasseur, S., & Charlier, R. (2012). Modelling the excavation damaged zone in Callovo-Oxfordian claystone with strain localization. Paper presented at the 23rd ALERT Geomaterials Workshop, Aussois, France.

[49] Pardoen, B., Talandier, J., Charlier, R., Collin, F., Radu, J.-P., & Gerard, P. (2012). Numerical modelling of an in situ ventilation test in Callovo-Oxfordian claystone. Poster session presented at the 5th International Meeting on Clays in Natural & Engineered Barriers for Radioactive Waste Confinement, Montpellier, France.

[50] Pardoen, B., Talandier, J., Charlier, R., Collin, F., & Radu, J.-P. (2012). Hydro and Hydro-Mechanical Modelling of Ventilation Test in Clayey Rocks. Paper presented at the 2d European Conference on Unsaturated Soils, E-UNSAT 2012, Napoli, Italy.

[51] Pardoen, B., Talandier, J., Charlier, R., Collin, F., & Radu, J.-P. (2012). Modélisation numérique d'un essai de ventilation in situ. Paper presented at Transfert 2012, Propriétés de transfert des géomatériaux, Lille, France.

[52] Pardoen, B., Charlier, R., Collin, F., Radu, J.-P., & Talandier, J. (2011). Hydro and hydro-mechanical modelling of ventilation test in clayey rocks. Poster session presented at the 22nd ALERT Geomaterials Workshop, Aussois, France.

TEACHING

Assistant Professor (UCL, Louvain School of Engineering, Civil engineering):

2018-2019 Geotechnics
Course: 1st Master, 5 ects., 30h/year of theoretical lectures, oral evaluation, LGCIV2071.

Subjects: Geotechnics, geotechnical structures, soil-structure interactions, rock mechanics, constitutive modelling of soils and rocks.

Building project
Course: 1st Master, 7 ects., 16h/year of practical sessions, oral group evaluation, LGCIV2011.
Subjects: Soil classification, building foundations, pile and shallow foundation design.

Geomaterials
Course: 2d Bachelor, 5 ects., 5h/year of theoretical lectures, written evaluation, LGCIV1031.
Subjects: Nature of soil and rocks, water effect.

2017-2019 Soil mechanics
Course: 3rd Bachelor, 5 ects., 30h/year of theoretical lectures, written evaluation, LGCIV1072.
Subjects: Soil mechanics and geotechnical structures.

Master thesis supervisions:

2018-2019 Title: "Unravelling the strength of hydrothermally-altered volcanic rocks: from micromechanical properties of their mineral assemblages to large scale modelling" by M. Musyck, UCL.
Subjects: rock alteration, small to large scale modelling of rock, microscale properties of rocks.

2017-2018 Title : "Caractérisation expérimentale double-échelle d'une roche magmatique : comparaison entre propriétés microscopiques et macroscopiques" by M. Kubushishi, UCL-ECAM.
Subjects: rock mechanics, rock testing, macro- and microscopic properties, SEM, nano-indentation.

2014-2015 Title: "Hydromechanical modelling of a ventilation test in the Underground Research Laboratory of ANDRA" by T. Công-Tâm, supervised by Pr. F. Collin, ULg.
Subjects: numerical modelling, hydromechanical coupling, gallery excavation, material drainage, air-rock interaction, partial saturation, etc.

Private teaching in higher education:

2014-2015 Organism: SA Cogito, Brussels, Belgium.
Students: all years of Bachelor's degree in civil and industrial engineering, ULg and HELMo Gramme.
Subjects: mathematics, physics, chemistry, mechanics, mechanics of materials, scientific drawing, geotechnics, geophysical prospecting, statistics, economy, etc.

Doctoral assistant (ULg, Applied sciences, Civil engineering):

2011-2015 Exercise / teaching sessions, written evaluation.
Course: "Soil mechanics and geotechnics", GERE0019-1, 30h/year, Pr. R. Charlier and F. Collin.
Students: 1st Master, bioengineering, Gembloux Agro-Bio Tech faculty.
Subjects: porous granular material, mechanical properties, water effects in soils, consolidation, stress state, shallow and deep foundations, settlements, slope stability, retaining wall.

2012-2014 Exercise sessions, written evaluation.
Courses: "Experimental geotechnics", GCIV0623-2, "Soil and rock mechanics", GCIV2036-2, "Building integrated project", GCIV0608-1, Pr. R. Charlier and F. Collin.
Students: 3rd Bachelor, 1st Master, civil engineering.
Subjects: pile foundation design, rock mechanics and rock joints behaviour, soil investigation, building foundation, etc.

ADMINISTRATION AND COLLECTIVE RESPONSIBILITIES

UCL:

2018-2019 - Manager of the civil and environmental engineering (GCE) department (August-December 2018).

- Member of the Management Committee of experimental platform LEMSC, Laboratoire Essais mécaniques, Structures et génie civil (since January 2018).

- Delegate of the GCE department at the steering committee of the Institute of Mechanics, Materials, and Civil Engineering, iMMC (since August 2018).

- Delegate of the GCE department at the degree accordance council of the Louvain School of Engineering (EPL) for Bachelor and Master degrees (since January 2018).

- Member of the selection committee of PhD-assistant in iMMC.

Member of juries:

PhD thesis: Title: "Pile driving models within the framework of a non-dimensional analysis" by K. H. Victor,
supervised by Pr. A. Holeyman, UCL.
Subjects: pile driving formulae, impact mechanism, energy transfer, dimensional analysis, lumped-parameter model.

Master thesis (10): on calcarenite used as offshore windmills foundation, excavation influence on CPT results, modelling of dam scouring, history and design of wood structures, sediment transport, pile testing, etc.

Member of PhD steering committees:

2017-2019 "Bearing capacity of foundations in Hoek-Brown material: contribution of cylindrical and spherical cavities expansion in rock masses." by H. Gharsallaoui, supervised by Pr. A. Holeyman, UCL.

2018-2019 "Reducing uncertainties of dynamic pile load testing" by M. Jafari, supervised by Pr. A. Holeyman, UCL.

OTHERS

Memberships:

SBGIMR Société Belge de Géologie de l'Ingénieur et de Mécanique des Roches.
Member of the scientific and technical council (since june 2019).
CFMS Comité Français de Mécanique des Sols et de Géotechnique.
CFMR Comité Français de Mécanique des Roches.
ISRM International Society for Rock Mechanics.

Various:

2015-now Reviews of scientific articles in international journals (Eng. Geol., Comp. Geotech., Rock Mech. Roch Eng., …).

2015 Press scientific article. Production of a popularising scientific article about the research on nuclear wastes storage realised in the ArGEnCo department at ULg.

2014	Jury of student project. "Building integrated project", Pr. F. Collin, courses GCIV0608-1, ULg.
2013	Contribution to the organisation of an international workshop. "LAGASHOP 2013, First International Workshop on the Finite Element Code LAGAMINE" (9-12 September 2013, ULg, Belgium).
2012	Follow-up meetings of a postdoctoral research project.
2011-2015	Examination, teaching and pedagogical meetings.
2011-2015	Various actions and activities with an industrial partner (Andra).

Languages:

French: native language.
English: good knowledge.
Dutch: basic knowledge.

Geotechnical softwares:

Use and developments: Lagamine finite element code (ULg, 3SR), FLAC.
Programming: Matlab, fortran, fish, linux.
Use: Plaxis, Geo-studio, Abaqus etc.