

Thomas Helfer

Modélisation et simulation du comportement thermo-mécanique des éléments combustibles Laboratoire de simulation du combustible (CEA IRESNE/DES/DEN/DEC/SESC/LSC)

Articles de revue

- 2022 Homogenized constitutive equations for porous single crystals plasticity., Cédric Sénac, Jean-Michel Scherer, Jérémy Hure, Thomas Helfer et Benoît Tanguy, European Journal of Mechanics / A Solids.
- 2021 Large-deformation geomechanical problems studied by a shear-transformation-zone model using the material point method., Wenlong Li, Ning Guo, Z.X. Yang, et Thomas Helfer., Computers and Geotechnics., 10.1016/j.compgeo.2021.104153.
- 2020 Philippe Garcia, Audrey Miard, Thomas Helfer, Jean-Baptiste Parise, Xavière Iltis et Guy Antou, The effect of oxygen partial pressure on dislocation creep in polycrystalline uranium dioxide, Journal of the European Ceramic Society., 10.1016/j.jeurceramsoc.2020.09.005.
- 2020 **The MFrontGenericInterfaceSupport project**, Journal of Open Source Software, Thomas Helfer, Jérémy Bleyer, Tero Frondelius, Ivan Yashchuk, Thomas Nagel and Dmitri Naumov.
- 2020 An efficient and robust staggered algorithm applied to the quasi-static description of brittle fracture by a phase-field approach, Ye Lu, Thomas Helfer and Olivier Fandeur, Computer Methods in Applied Mechanics and Engineering.
- 2019 Description and thermal simulation of the DIAMINO irradiation experiment of transmutation fuel in the OSIRIS reactor, Syriac Bejaoui, Thomas Helfer, Stéphane Bendotti and Thierry Lambert, Progress in Nuclear Energy.
- 2018 Crystal viscoplastic modeling of UO2 single crystal, Luc Portelette, Jonathan Amodeo, Ronan Madec, Julian Soulacroix, Thomas Helfer and Bruno Michel, Journal of Nuclear Materials.
- 2018 Simulation of reactivity-initiated accident transients on UO2-M5® fuel rods with ALCYONE V1.4 fuel performance code, Isabelle Guénot-Delahaie, Jérôme Sercombe, Patric Goldbronn, , Eric Federici, Thomas Le Jolu, Aurore Parrot, Christine Delafoy, and Christian Bernaudat , Nuclear Engineering and Technology., 10.1016/j.net.2017.12.006.

Centre de Cadarache – F-13108 Saint-Paul Lez Durance, France

33+ (0)4 42 25 22 67 • ■ 33+ (0)4 42 25 47 47

□ thomas.helfer@cea.fr

https://www.researchgate.net/profile/Thomas-Helfer-2

- 2017 Analytical and 3D numerical analysis of the thermoviscoelastic behavior of concrete-like materials including interfaces, Benoit Bary, Christophe Bourcier and Thomas Helfer, Advances in Engineering Software.
- 3D Continuum Damage Approach for Simulation of Crack Initiation and Growth in Ceramic Materials., Bruno Michel, Thomas Helfer, Isabelle Ramière et Coralie Esnoul., Key Engineering Materials., 10.4028/www.scientific.net/KEM.713.155.
- 2016 A new numerical methodology for simulation of unstable rupture in fragile materials, Bruno Michel, Thomas Helfer, Isabelle Ramière, and Coralie Esnoul, Engineering Fracture Mechanics.
- 2016 2D simulation of hydride blister cracking during a RIA transient with the fuel code ALCYONE, Jérôme Sercombe, Thomas Helfer, Eric Federici, David Leboulch, Thomas Le Jolu, Arthur Hellouin de Ménibus, and Christian Bernaudat, EPJ Nuclear Sciences & Technologies, 2:22, 2016.
- 2016 Thermoviscoelastic Analysis of Concrete Creep at Mesoscale, Benoit Bary, Christophe Bourcier, and Thomas Helfer, Key Engineering Materials, 711:652–658, September 2016.
- 2015 Iterative residual-based vector methods to accelerate fixed point iterations, Isabelle Ramière, Thomas Helfer, Computers & Mathematics with Applications, Volume 70, Issue 9, November 2015, Pages 2210-2226.
- 2015 Introducing the open-source mfront code generator: Application to mechanical behaviours and material knowledge management within the PLEIADES fuel element modelling platform, Thomas Helfer, Bruno Michel, Jean-Michel Proix, Maxime Salvo, Jérôme Sercombe, Michel Casella, Computers & Mathematics with Applications, Volume 70, Issue 5, September 2015, Pages 994-1023.
- 2015 Extension of monodimensional fuel performance codes to finite strain analysis using a lagrangian logarithmic strain framework, *Thomas Helfer*, Nuclear Engineering And Design, Volume 288, July 2015, Pages 75-81.
- 2015 Licos, a fuel performance code for innovative fuel elements or experimental devices design., Thomas Helfer, Syriac Bejaoui et Bruno Michel., Nuclear Engineering and Design, 10.1016/j.nucengdes.2015.07.070.
- 2015 Current status in PLEIADES fuel performance codes of cracks and damage modelling, Thomas Helfer, Bruno Michel, Jérôme Sercombe, International Conference on Computational Modeling of Fracture and Failure of Materials and Structures, Paris.
- 2015 Experimental characterization and modeling of UO2 grain boundary cracking at high temperatures and high strain rates, Maxime Salvo, Jérôme Sercombe, Thomas Helfer, Philippe Sornay, Thierry Désoyer, Journal of Nuclear Materials, Volume 460, May 2015, Pages 184-199.
- 2015 Experimental characterization and modelling of UO2 behavior at high temperatures and high strain rates, Maxime Salvo, Jérôme Sercombe, Jean-Claude Ménard, Jérôme Julien, Thomas Helfer, Thierry Désoyer, Journal of Nuclear Materials, Volume 456, January 2015, Pages 54-67.

2013 Stress concentration during pellet cladding interaction: Comparison of closed-form solutions with $2D(r,\theta)$ finite element simulations, $J\acute{e}r\^{o}me$ Sercombe, Renaud Masson, Thomas Helfer, Nuclear Engineering and Design, Volume 260, July 2013.

—— Chapitres de livre

2021 Two fuel performance codes of the PLEIADES platform: ALCYONE and GERMINAL., Bruno Michel, Isabelle Ramière, I. Vaillard, Clément Introïni, Marc Lainet, Nathalie Chauvin, Vincent Marelle, Antoine Bouloré, Thomas Helfer, Renaud Masson, Jérôme Sercombe, Jean-Christophe Dumas, Laurence Noirot, Stéphane Bernaud., Nuclear Power Plant Design and Analysis Codes., 10.1016/B978-0-12-818190-4.00009-7.

Participatation à congrès

- 2023 Understanding AM 316L steel microstructure evolution due to postprocess laser scanning: a thermo-mechanical modeling and in-situ laser-SEM study., Nikhil Mohanan, Juan Guillermo Santos Macias, Jérémy Bleyer, Thomas Helfer and Manas Upadhyay, 2023 TMS Annual Meeting & Exhibition, March 19–23.
 - San Diego, California, USA
- 2022 Flexible integration of constitutive models into simulators for non-iso-thermal two-phase flow in deformable porous and fractured media, Thomas Nagel, Thomas Helfer, Michael Pitz, Dmitri Naumov, Norbert Grunwald, Sonja Kaiser, Keita Yoshioka, Olaf Kolditz, 11th European Solid Mechanics Conference, 04–08 July 2022.

 Galway, Ireland
- 2022 Investigating the high temperature visco-plastic behaviour of polycristalline UO_{2+x} , Philippe Garcia, Jean-Baptiste Parise, Thomas Helfer, Audrey Miard, Marco Cologna, Guy Antoy and Xavière Iltis., Nuclear Materials Conference (NUMAT)., 24-28 October.. Ghent, Belgium
- 2022 Multiphysics modeling of adhesive interface with damage., Sébastien D'Andréa, Stéphane Lejeunes, Frédéric Lebon, Victor Blanc, Marc Lainet, Thomas Helfer., 25ème Congrès Français de Mécanique.
- 2022 Development of a novel damage model for concrete accounting for creep, high temperature, and constraint effects., Jefri Draup, Alexandre Gangnant, Graham Doughty, Jiansong Guo, Thomas Helfer and Giacomo Torelli., SMiRT-26., Berlin/Potsdam, Germany..

 July 10-15, 2022
- 2022 Analysing the compaction of crushed salt in repositories for high-level waste in salt formations using a dedicated constitutive model., Éric Simo, Thomas Nagel, Christian Lerch, Paola Léon Vargas and Thomas Helfer., EGU22 meeting., Vienne..

 May 2022

- 2022 Modélisation de l'amorçage et de la propagation de l'endommagement d'un milieu hétérogène de type matrice inclusions soumis à des dilatations différentielles, Vincent Gauthier, Mihail Garajeu, Bruno Michel, Thomas Helfer et Renaud Masson., 25ème Congrès Français de Mécanique.
- 2022 Simulation du comportement sous irradiation des gaines en alliage de zirconium., Cécilia Gicquel, Fabien Onimus, Renald Brenner, Thomas Helfer et Renaud Masson., 25ème Congrès Français de Mécanique.
- Micromorphic damage behaviours for quasi-brittle materials: a numerical implementation and link with phase-field approach to fracture., David Siedel Olivier Fandeur, Thomas Helfer, Jacques Besson, Samuel Forest, Kaïs Ammar, 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS)., Oslo..

 Norway
- 2022 Polycrystalline simulations of in-reactor deformation of Zircaloy-4 cladding tubes during nominal operating conditions, Cécilia Gicquel, Fabien Onimus, Renald Brenner, Thomas Helfer et Renaud Masson, Zirconium in the Nuclear Industry.
- 2022 A gradient damage approach using the Hybrid High Order method, David Siedel Olivier Fandeur, Thomas Helfer, Jacques Besson, Samuel Forest, Kaïs Ammar, 15th World Congress on Computational Mechanics (WCCM-XV) and 8th Asian Pacific Congress on Computational Mechanics (APCOM-VIII), Yokohama, Japan..
- 2022 Data-Driven Simulations for Panel Paintings: modelling the experimental results., Lorenzo Riparbelli, Luca Uzielli, Paola Mazzanti, Ioannis Christovasilis, Thomas Helfer et Marco Fioravanti., 15th World Congress on Computational Mechanics (WCCM-XV) and 8th Asian Pacific Congress on Computational Mechanics (APCOM-VIII), Yokohama, Japan..
- 2022 Semi-supervised deep learning of constitutive relations., Marius Duvillard, Loïc Giraldi et Thomas Helfer., 15th World Congress on Computational Mechanics (WCCM-XV) and 8th Asian Pacific Congress on Computational Mechanics (APCOM-VIII), Yokohama, Japan..
- 2022 Schéma de résolution locale pour la méthode Hybrid High Order et application en mécanique non-linéaire, David Siedel, Thomas Helfer, Olivier Fandeur, Jacques Besson, Samuel Forest, Kaïs Ammar, 15ème Colloque National en Calcul des Structures, Giens, France..
- 2022 Implicit integration of the constitutive equations of a polycrystal obtained by the Berveiller-Zaoui homogeneization scheme., Thomas Helfer, Cécilia Gicquel, Fabien Onimus et Renaud Masson., 15ème Colloque National en Calcul des Structures, Giens, France..
- 2022 New functionalities of Versions 3.3, 3.4 and 4.0 of the TFEL/MFront project., Thomas Helfer, Jérémy Hure, Mohamed Shokeir, Olivier Fandeur, Olivier Jamond, Jean-Philippe Mathieu, Simon Raude, Dominique Geoffroy, Jérémy Bleyer, Thomas Nagel et Guillaume Latu., 15ème Colloque National en Calcul des Structures, Giens, France..

- 2022 MANTA: un code HPC généraliste pour la simulation de problèmes complexes en mécanique., Olivier Jamond, Nicolas Lelong, Axel Fourmont, Joffrey Bluthé, Matthieu Breuze, Pascal Bouda, Guillaume Brooking, Florence Drui, Alexandre Epalle, Olivier Fandeur, Gauthier Folzan, Thomas Helfer, Francis Kloss, Guillaume Latu, Antoine Motte, Christopher Nahed, Adrien Picard, Raphaël Prat, Isabelle Ramière, Morgane Steins et Benoît Prabel., 15ème Colloque National en Calcul des Structures, Giens, France..
- 2021 MFEM-MGIS-MFront, a MFEM-Based Library for Nonlinear Solid Thermomechanics, Thomas Helfer et Guillaume Latu, First MFEM workshope, https://www.youtube.com/watch?v=K6HrhFWdfx8&list=PLy9rIbGDXrG2vXwWJctvLAKz5xYjTRcR9&index=6.
- 2021 Porous Crystal Plasticity-based Ductile Fracture assessment for FCC Nuclear materials., Cédri Sénac, Jérémy Hure, Jean-Michel Scherer, Thomas Helfer et Benoît Tanguy., European Nuclear Young Generation..
- 2021 MFront: an open-source code generator for complex constitutive laws, Thomas Helfer, Gentien Marois, Jérémy Bleyer, 14th World Congress on Computational Mechanics.
- 2021 mgis.fenics Part II: Cosserat media in small deformation mgis.fenics., Tamara Dancheva, Unai Alonso. Michael ton, Jérémy Bleyer, Thomas Helfer, Raffaele Russo., FEniCS 2021., https://www.researchgate.net/publication/350811403_mgisfenics_ Part_II_Cosserat_media_in_small_deformation_with_mgisfenics.
- 2021 mgis.fenics Part I: coupling MFront and FEniCS for complex solid mechanics simulations., Thomas Helfer, Jérémy Bleyer, Raffaele Russo, Tamara Dancheva., FEniCS 2021, https://www.researchgate.net/publication/350819968_mgisfenics_Part_I_coupling_MFront_and_FEniCS_for_complex_solid_mechanics_simulations.
- 2020 MGIS et mgis.fenics (The MFrontGenericInterfaceSupport project and its binding with FEniCS), Thomas Helfer et Jérémy Bleyer., Seminar on automatic code-generation tools organisé par le laboratoire Navier (École des Ponts).
- 2020 MFront: code generator dedicated to material knowledge., Thomas Helfer et Jérémy Bleyer., Seminar on automatic code-generation tools organisé par le laboratoire Navier (École des Ponts), https://www.youtube.com/watch?v=nldf7IEtnpM.
- 2020 Herausforderungen in der THMC Modellierung für die Endlagerforschung., Thomas Nagel, Lars Bilke, Jörge Buchwald, Aqeel Afzal Chaudhry, Uwe-Jens Görke, Norbert Grunwald, Thomas Helfer, Olaf Kolditz, Renchao Lu, Jobst Maßmann, Vanessa Montoya, Dmitri Naumov, Francesco Parisio, Haibing Shao, Hua Shao, Wenqing Wang, Keita Yoshioka., Tage der Standortauswahl, Braunschweig, Germany..

- New functionalities of Versions 3.1 and 3.2 of TFEL/MFront, Helfer, Thomas and Fandeur, Olivier and Geoffroy, Dominique and Toulemonde, Charles and Hure, Jérémy and Dupuy, Laurent and Forré, Agathe and Deloison, Dominique and Péralès, Frédéric and Lejeune, Arnaud and Thibault, Sébastien and Richard, Fabrice and Gaillard, Yves and Almanstötter, Jürgen and Gangnant, Alexandre and Draup, Jefry and Kececioglu, Anthony and Garnier, Christophe and Garnier, Christophe and Roland, Jérôme, 14ème Colloque National en Calcul des Structures, Giens, France.
- Development of a novel damage model for concrete subjected to high temperature and constraint., Proceeding of SMIRT 25. Charlotte, NC, USA, August 2019., Jefry Draup, Alexandre Gangnant, Gaëtan Colette, Graham Doughty, Jiansong, Guo, Thomas Helfer, Giacomo Torelli et Parthasarathi Mandal, https://www.researchgate.net/publication/333783199_Development_of_a_Novel_Damage_Model_for_Concrete_Subjected_to_High_Temperature_and Constraint.
- 2019 High temperature creep study of recrystallized Tungsten: 3-point bending experiments and finite element simulation., Jean-Baptiste Parise, Philippe Garcia, Thomas Helfer, Audrey Miard, Alain Durif, Marianne Richou, Guy Antou., Plasma-Facing Materials and Components for Fusion Applications (PFMC), Eindhoven, Netherlands.
- 2019 Une implémentation numérique efficace pour le traitement de la fissuration fragile par champ de phase : application aux combustibles nucléaires, Ye Lu, Thomas Helfer, Olivier Fandeur, Benoît Bary., Congrès Français de Mécanique.
- 2019 Comparison of different implicit integration procedures for an elastoviscoplastic model., International Conference on Material Modelling (ICCM), Stockholm, Agathe Forre, Thomas Helfer et Khouloud Derouiche, https://indico. lunarc.lu.se/event/1/contributions/125/.
- 2019 MFrontInterface.jl: MFront material models in JuliaFEM., Tero Frondelius, Thomas Helfer, Ivan Yashchuk, Joona Vaara, Anssi Laukkanen., Proceedings of the 32 nd Nordic Seminar on Computational Mechanics, Oulu, Finlande.
- 2018 High temperature creep of uranium dioxide: on the influence of equilibrium oxygen partial pressure., Philippe Garcia, Audrey Miard, Jean-Baptiste Parise, Mariem Ben Saada, Xavière Iltis, Clément Introni et Thomas Helfer., MRS spring meeting., Phoenix, USA...
- 2018 Fast, Robust and Portable Implementations of Complex Mechanical Behaviours with the MFront Code Generator., Thomas Helfer, 13th World Congress on Computational Mechanics, New York, USA.
- 2018 A phase-field description of brittle crack propagation in nuclear fuels, Thomas Helfer et Olivier Fandeur, 13th World Congress on Computational Mechanics, New York, USA.
- 2017 Modeling and simulation of cracking in quasi-fragile materials by using phase field method: Application to concrete., Tran Dang, Benoît Bary, Thomas Helfer, Qi-Chang He, Julien Yvonnet., ICF 2017 14th International Conference on Fracture..

- 2017 Status of the DIAMINO experiment irradiated in the OSIRIS reactor., Syriac Bejaoui, Stéphane Bendotti, Thierry Lambert et Thomas Helfer., GLOBAL 2017 - International Nuclear Fuel Cycle Conference., Seoul, South Korea..
- 2017 Modélisation par champ de phase de la fissuration des matériaux fragiles: Aspects numériques et applications au combustible nucléaire oxyde., Thomas Helfer, Benoît Bary, Tran Dang, Oliver Fandeur et Bruno Michel., 13ème colloque national en calcul des structures. Giens, France.
- 2017 New functionalities of the 3.0 version of TFEL, MFront and MTest., Thomas Helfer, Olivier Fandeur, David Haboussa, Dominique Deloison, Olivier Jamond, Rémi Munier, Lucie Berthon, Étienne Castelier et Isabelle Ramière., 13ème colloque national en calcul des structures. Giens, France.
- 2017 Insertion reliability studies for the RBC-type control rods in ASTRID, Maxime Zabiégo, Denis Lorenzo, Thomas Helfer et Étienne Guillemin, Proceedings of the FR17 IAEA Conference, Yekaterinburg, Russian Federation.
- 2016 Implémentation de lois de comportement mécanique à l'aide du générateur de code MFront., Thomas Helfer., Séminaire IMSIA., Saclay, France.
- 2016 Using Anderson Algorithm to accelerate FFT Based methods., Étienne Castelier, Lionel Gélébart et Thomas Helfer., ECCOMAS.
- 2015 Numerical Analysis of Concrete Creep on Mesoscopic 3D Specimens., Benoît Bary, Christophe Bourcier et Thomas Helfer., Proceedings of the 10th International Conference on Mechanics and Physics of Creep, Shrinkage, and Durability of Concrete and Concrete Structures..
- 2015 Advanced mechanical resolution in CYRANO3 fuel performance code using MFront generation tool., Charles Petry et Thomas Helfer., LWR Fuel Performance Meeting/TopFuel/WRFPM. Zurich, Switzerland.
- 2015 2D simulations of hydride blister cracking during a RIA transient with the fuel code ALCYONE., Jérôme Sercombe, David le Boulch, Thomas Le Jolu, Arthur Hellouin de Menibus, Thomas Helfer, Éric Fédérici, et Christian Bernaudat., LWR Fuel Performance Meeting/TopFuel/WRFPM. Zurich, Switzerland., https://hal.archives-ouvertes.fr/cea-02500835.
- 2015 Characterization, Simulation and Improvement of Spacer Pads Mechanical Behaviour for Sodium Fast Reactor Fuel Subassemblies, Victor Blanc, Xavier Jeanningros, Thomas Helfer, Pierre Lamagnère, et Thierry Beck, SMIRT 23 23th International Conference on Structural Mechanics in Reactor Technology, https://hal.archives-ouvertes.fr/cea-02492561/.
- 2015 Recent improvements of the fuel thermomechanical modelling in the PLEIADES Platform to better simulate accidental transients conditions using the Alcyone fuel performance code., Thomas Helfer, Jérôme Sercombe, Bruno Michel, Isabelle Ramière, Maxime Salvo, Olivier Fandeur, Patrick Goldbronn, Vincent Marelle, Éric Fédérici., NuFuel & MMSNF 2015, Karlsruhe, Germany..
- 2015 Implantation de lois de comportement mécanique à l'aide de MFront : Simplicité, efficacité, robustesse et portabilité., Thomas Helfer, Jean-Michel Proix, Olivier Fandeur., 12ème colloque national en calcul des structures. Giens, France.

- 2013 Recent modelling improvements in fuel performance code GERMINAL for SFR oxide fuel pins, Marc Lainet, Vincent Bouineau, Thomas Helfer, Pelletier Michel, Proceedings of the International Conference on Fast Reactors and Related Fuel Cycles: Safe Technologies and Sustainable Scenarios, Paris.
- 2013 Thermomechanical simulation of the Diamino irradiation experiment using the LICOS fuel design code., Syriac Bejaoui, Thomas Helfer, Éric Brunon, Thierry Lambert, Cédric Neyroud, Stephane Bendotti, Global 2013, Salt Lake City, UT.
- 2013 State of the art of the conceptual designs for ASTRID control and shutdown rods., Isabelle Guénot-Delahaye, Denis Lorenzo, Bernard Valentin, Jean-Michel Escleine et Thomas Helfer., Proceedings of the International Conference on Fast Reactors and Related Fuel Cycles: Safe Technologies and Sustainable Scenarios
- 2009 The fuel performance code Celaeno, conception and simulation of fuel elements for gas-cooled fast reactor., Thomas Helfer, Éric Brunon, Étienne Castelier, Alain Ravenet et Nathalie Chauvin., Proceedings of GLOBAL 2009 conference on advanced nuclear fuel.
- 2005 Modelling the effect of oxide fuel fracturing on the mechanical behaviour of fuels rods, Thomas Helfer, Philippe Garcia, Jean-Marc Ricaud, David Plancq, Christine Struzik, François Sidoroff et L. Bernard, Pellet-clad Interaction in Water Reactor Fuels: Seminar Proceedings, Aix en Provence, France.
- 2004 PLEIADES: a unified environment for multi-dimensional fuel performance modeling., David Plancq, Gilles Thouvenin, Jean-Marc Ricaud, Christine Struzik, Thomas Helfer, Fabrice Bentejac, Philippe Thévenin et Renaud Masson., International meeting on LWR fuel performance, Floride..

Rapport techniques publiques

- Assisted computation of the consistent tangent operator of behaviours integrated using an implicit scheme. Theory and implementation in MFront., Thomas Helfer., Documentation du projet MFront., https://www.researchgate.net/publication/342721072_Assisted_computation_of_the_consistent_tangent_operator_of_behaviours_integrated_using_an_implicit_scheme_Theory_and_implementation_in_MFront.
- 2020 Small-strain von mises elastoplasticity., Jérémy Bleyer et Thomas Helfer., Documentation du projet mgis.fenics., https://www.researchgate.net/publication/340953012_Small-strain_von_Mises_elastoplasticity.
- 2020 **Jérémy Bleyer et Thomas Helfer**, Transient heat equation with phase change, Documentation du projet mgis.fenics, https://www.researchgate.net/publication/341359549_Transient_heat_equation_with_phase_change.
- 2020 Monolithic transient thermo-elasticity., Jérémy Bleyer et Thomas Helfer., Documentation du projet mgis.fenics., https://www.researchgate.net/publication/341372231_Monolithic_transient_thermo-elasticity.
- 2020 Stationnary non-linear heat transfer using mgis.fenics., Jérémy Bleyer et Thomas Helfer., Documentation du projet mgis.fenics., https://www.researchgate.net/publication/340965420_Stationnary_non-linear_heat_transfer_using_mgisfenics.

- 2020 Stationnary non-linear heat transfer: 3D problem and performance comparisons., Jérémy Bleyer et Thomas Helfer., Documentation du projet mgis.fenics., https://thelfer.github.io/mgis/web/mgis_fenics_nonlinear_heat_transfer_3D.html.
- 2020 Phase-field approach to brittle fracture., Jérémy Bleyer et Thomas Helfer., Documentation du projet mgis.fenics, https://www.researchgate.net/publication/341359638_Phase-field_approach_to_brittle_fracture.
- 2020 Overview of the mgis.fenics module., Jérémy Bleyer et Thomas Helfer., Documentation du projet mgis.fenics., https://www.researchgate.net/publication/340952899_Overview_of_the_mgisfenics_module.
- 2020 Finite-strain elastoplasticity within the logarithmic strain framework., Jérémy Bleyer et Thomas Helfer, Documentation du projet mgis.fenics., https://www.researchgate.net/publication/340953042_Finite-strain_elastoplasticity_within_the_logarithmic_strain_framework.
- 2020 Extending the StandardElastoViscoPlasticity brick with a new stress criterion., Thomas Helfer, Jérémy Hure, Mohamed Shokeir, Documentation du projet MFront, https://www.researchgate.net/publication/340280305_Extending_the_StandardElastoViscoPlasticity_brick_with_a_new_stress_criterion.
- 2020 Using MFront as a wrapper for a thermo-hydro-mechanical behaviour for bentonite available in the TRIAX package., Thomas Helfer, Thomas Nagel et David Mašín., Documentation du projet MFront, https://www.researchgate.net/publication/342747050_Using_MFront_as_a_wrapper_for_a_thermo-hydro-mechanical_behaviour_for_bentonite_available_in_the_TRIAX_package.
- 2020 A brief introduction to the MGIS C++ library for mechanical behaviours., Documentation du projet mgis, Thomas Helfer, https://www.researchgate.net/publication/333089236_A_brief_introduction_to_the_MGIS_C_library_for_mechanical_behaviours.
- 2019 Elasto-plastic analysis implemented using the MFront code generator., Jérémy Bleyer et Thomas Helfer, Numerical tours of continuum mechanics using FEniCS, Availablefrom:https://comet-fenics.readthedocs.io/en/latest/demo/plasticity_mfront/plasticity_mfront.py.html.
- 2017 How to implement an isotropic viscoplastic behaviour combining isotropic hardening and multiple kinematic hardenings following an Armstrong-Frederic evolution of the back stress., Thomas Helfer., Documentation of the MFront project, https://thelfer.github.io/tfel/web/isotropicplasticityamstrongfrederickinematichardening.html.

Sites web

The TFEL/MFront project, https://thelfer.github.io/tfel/web/index.html.

The MGIS project, https://thelfer.github.io/mgis/web/index.html.
The MFrontGallery project, https://thelfer.github.io/MFrontGallery/web/index.html.

The MFEM/MGIS project, https://thelfer.github.io/mfem-mgis/web/index.html.