

Roberto Alessi



List of publications

Publications in international journals

1. R. Alessi e J. Ulloa. «Endowing Griffith's fracture theory with the ability to describe fatigue cracks». In: *Engineering Fracture Mechanics* 281 (2023), p. 109048. DOI: [10.1016/j.engfracmech.2023.109048](https://doi.org/10.1016/j.engfracmech.2023.109048);
2. M. Kumar, R. Alessi e E. Salvati. «GPFniCS: A generalised phase field method to model fracture». In: *SoftwareX* 24 (2023), p. 101594. DOI: [10.1016/j.softx.2023.101594](https://doi.org/10.1016/j.softx.2023.101594);
3. R. Alessi, M. Brunetti, R. Paroni e P. Scardaoni. «A continuous pleated birod for converting contractions into twisting through instability». In: *Journal of the Mechanics and Physics of Solids* (2023), p. 105451. DOI: [10.1016/j.jmps.2023.105451](https://doi.org/10.1016/j.jmps.2023.105451);
4. R. Alessi, L. Aliotta, M. Brunetti, M. Ciotti, R. Paroni e M. Picchi Scardaoni. «Instability and Softening in a Continuous Bi-Rod». In: *Materials & Design* 224 (2022), p. 111387. DOI: [10.2139/ssrn.4177872](https://doi.org/10.2139/ssrn.4177872);
5. J. Ulloa, N. Noii, R. Alessi, F. Aldakheel, G. Degrande e S. François. «Variational modeling of hydromechanical fracture in saturated porous media: a micromechanics-based phase-field approach». In: *Computer Methods in Applied Mechanics and Engineering* 396 (2022), p. 115084. DOI: [10.1016/j.cma.2022.115084](https://doi.org/10.1016/j.cma.2022.115084);
6. J. Ulloa, J. Wambacq, R. Alessi, E. Samaniego, G. Degrande e S. François. «A micromechanics-based variational phase-field model for fracture in geomaterials with brittle-tensile and compressive-ductile behavior». In: *Journal of the Mechanics and Physics of Solids* 159 (2022), p. 104684. DOI: [10.1016/j.jmps.2021.104684](https://doi.org/10.1016/j.jmps.2021.104684);
7. J. Ulloa, J. Wambacq, R. Alessi, G. Degrande e S. François. «Phase-field modeling of fatigue coupled to cyclic plasticity in an energetic formulation». In: *Computer Methods in Applied Mechanics and Engineering* 373 (2021), p. 113473. DOI: [10.1016/j.cma.2020.113473](https://doi.org/10.1016/j.cma.2020.113473). arXiv: [1910.10007](https://arxiv.org/abs/1910.10007);
8. J. Ulloa, R. Alessi, J. Wambacq, G. Degrande e S. François. «On the variational modeling of non-associative plasticity». In: *International Journal of Solids and Structures* 217-218 (2021), pp. 272–296. DOI: [10.1016/j.ijsolstr.2020.10.027](https://doi.org/10.1016/j.ijsolstr.2020.10.027);
9. P. Carrara, M. Ambati, R. Alessi e L. De Lorenzis. «A framework to model the fatigue behavior of brittle materials based on a variational phase-field approach». In: *Computer Methods in Applied Mechanics and Engineering* 361 (2020), p. 112731. DOI: [10.1016/j.cma.2019.112731](https://doi.org/10.1016/j.cma.2019.112731);
10. R. Alessi, F. Freddi e L. Mingazzi. «Phase-field numerical strategies for deviatoric driven fractures». In: *Computer Methods in Applied Mechanics and Engineering* 359 (2020), p. 112651. DOI: <https://doi.org/10.1016/j.cma.2019.112651>;

11. G. Lancioni e R. Alessi. «Modeling micro-cracking and failure in short fiber-reinforced composites». In: *Journal of the Mechanics and Physics of Solids* 137 (2020), p. 103854. DOI: <https://doi.org/10.1016/j.jmps.2019.103854>;
12. R. Alessi, V. Crismale e G. Orlando. «Fatigue Effects in Elastic Materials with Variational Damage Models: A Vanishing Viscosity Approach». In: *Journal of Nonlinear Science* 29 (2019). DOI: 10.1007/s00332-018-9511-9;
13. R. Alessi e F. Freddi. «Failure and complex crack patterns in hybrid laminates: A phase-field approach». In: *Composites Part B: Engineering* 179 (2019), p. 107256. DOI: <https://doi.org/10.1016/j.compositesb.2019.107256>;
14. R. Alessi, S. Vidoli e L. De Lorenzis. «A phenomenological approach to fatigue with a variational phase-field model: The one-dimensional case». In: *Engineering Fracture Mechanics* 190 (2018), pp. 53–73. DOI: 10.1016/j.engfracmech.2017.11.036;
15. R. Alessi, J.-J. Marigo, C. Maurini e S. Vidoli. «Coupling damage and plasticity for a phase-field regularisation of brittle, cohesive and ductile fracture: One-dimensional examples». In: *International Journal of Mechanical Sciences* 149 (2018), pp. 559–576. DOI: 10.1016/j.ijmecsci.2017.05.047;
16. J. Bleyer e R. Alessi. «Phase-field modeling of anisotropic brittle fracture including several damage mechanisms». In: *Computer Methods in Applied Mechanics and Engineering* 336 (2018), pp. 213–236. DOI: 10.1016/j.cma.2018.03.012;
17. R. Alessi, J. Ciambella e A. Paolone. «Damage evolution and debonding in hybrid laminates with a cohesive interfacial law». In: *Meccanica* 52 (2017), pp. 1079–1091. DOI: 10.1007/s11012-016-0437-8;
18. R. Alessi, A. Favata e A. Micheletti. «Pressurized CNTs under tension: A finite-deformation lattice model». In: *Composites Part B: Engineering* 115 (2017), pp. 223–235. DOI: 10.1016/j.compositesb.2016.10.006;
19. R. Alessi e F. Freddi. «Phase-field modelling of failure in hybrid laminates». In: *Composite Structures* 181 (2017), pp. 9–25. DOI: <https://doi.org/10.1016/j.compstruct.2017.08.073>;
20. E. Baioni, R. Alessi, V. Corinaldesi, G. Lancioni e R. Rizzini. «Feasibility Study of a Table Prototype Made of High-Performance Fiber-Reinforced Concrete». In: *Technologies* 5 (2017). DOI: 10.3390/technologies5030041;
21. R. Alessi e K. Pham. «Variational formulation and stability analysis of a three dimensional superelastic model for shape memory alloys». In: *Journal of the Mechanics and Physics of Solids* 87 (2016), pp. 150–176. DOI: 10.1016/j.jmps.2015.11.006;
22. R. Alessi. «Energetic formulation for rate-independent processes: remarks on discontinuous evolutions with a simple example». In: *Acta Mechanica* 227 (2016), pp. 2805–2829. DOI: 10.1007/s00707-016-1636-z;
23. R. Alessi e D. Bernardini. «Analysis of localization phenomena in Shape Memory Alloys bars by a variational approach». In: *International Journal of Solids and Structures* 73-74 (2015), pp. 113–133. DOI: <http://dx.doi.org/10.1016/j.ijsolstr.2015.06.021>;
24. R. Alessi, J.-J. Marigo e S. Vidoli. «Gradient damage models coupled with plasticity: Variational formulation and main properties». In: *Mechanics of Materials* 80 (2015), pp. 351–367. DOI: 10.1016/j.mechmat.2013.12.005;
25. R. Alessi, J.-J. Marigo e S. Vidoli. «Gradient Damage Models Coupled with Plasticity and Nucleation of Cohesive Cracks». In: *Archive for Rational Mechanics and Analysis* 214 (2014), pp. 575–615. DOI: 10.1007/s00205-014-0763-8;

26. G. Formica, W. Lacarbonara e R. Alessi. «Vibrations of carbon nanotube-reinforced composites». In: *Journal of Sound and Vibration* 329 (2010), pp. 1875–1889. DOI: 10.1016/j.jsv.2009.11.020.

Chapters in International Books

27. R. Alessi, M. Ambati, T. Gerasimov, S. Vidoli e L. De Lorenzis. «Comparison of Phase-Field Models of Fracture Coupled with Plasticity». In: *Advances in Computational Plasticity*. A cura di E. Oñate, D. Peric, E. de Souza Neto e M. Chiumenti. 2020. DOI: 10.1007/978-3-319-60885-3.

PhD thesis

28. R. Alessi. «Variational Approach to Fracture Mechanics with Plasticity». eng. Tesi di dott. Sapienza-Università di Roma/École Polytechnique, 2013.