Pieter Hofman

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R⁶ ResearchGate

Education

Dec. 2021 – Dec. 2025	**Ph.D.**, Computational Mechanics, Delft University of Technology
Feb. 2018 – Jun. 2021	**M.Sc. (cum laude)**, Civil/Structural Engineering, Delft University of Technology
Sep. 2016 – Feb. 2018	**Pre-master** Civil/Structural Engineering, Delft University of Technology
Sep. 2012 – Jun. 2016	**B.Sc.**, Civil/Structural Engineering, Amsterdam University of Applied Sciences

Experience

Sep. 2021 – Nov. 2021	**Researcher**, Computational Mechanics, Delft University of Technology
Feb. 2016 – Jun. 2016	**Bachelor's Thesis student**, Iv-Infra
Feb. 2015 – Jul. 2015	**Internship Trainee**, Iv-Infra

Awards & Honors

2024   Best presentation at the 27th Engineering Mechanics Symposium Title: *Modelling of interfacial fracture and fatigue in polymer composites*

Journal Articles

6. **P. Hofman**, F. P. van der Meer and L. J. Sluys, Computational analysis of fracture and fatigue in overmolded thermoplastic composites: time-homogenized viscoplasticity, cohesive fracture and processing effects. *Under Review* (2026).

5. **P. Hofman**, D. Kovačević, F. P. van der Meer and L. J. Sluys, A Viscoplasticity Model with an Invariant-Based Non- Newtonian Flow Rule for Unidirectional Thermoplastic Composites. *Mechanics of Materials* **211**, 105507. issn: 01676636. https://linkinghub.elsevier.com/retrieve/pii/S0167663625002698 (2025).

4. D. Kovačević, **P. Hofman**, I. B. C. M. Rocha and F. P. van der Meer, Unifying Creep and Fatigue Modeling of Composites: A Time-Homogenized Micromechanical Framework with Viscoplasticity and Cohesive Damage. *Journal of the Mechanics and Physics of Solids* **193**, 105904. issn: 00225096. https://linkinghub.elsevier.com/retrieve/pii/S0022509624003703 (2024).

3. **P. Hofman**, F. P. van der Meer and L. J. Sluys, Modeling of Progressive High-Cycle Fatigue in Composite Laminates Accounting for Local Stress Ratios. *Composites Part A: Applied Science and Manufacturing* **183**, 108219. issn: 1359835X. https://linkinghub.elsevier.com/retrieve/pii/S1359835X24002161 (2024).

2. **P. Hofman**, F. P. van der Meer and L. J. Sluys, A Numerical Framework for Simulating Progressive Failure in Composite Laminates under High-Cycle Fatigue Loading. *Engineering Fracture Mechanics* **295**. https://linkinghub.elsevier.com/retrieve/pii/S0013794423007440 (2024).

1. **P. Hofman**, L. Ke and F. P. van der Meer, Circular Representative Volume Elements for Strain Localization Prob- lems. *International Journal for Numerical Methods in Engineering* **124**, 784–807. issn: 0029-5981, 1097-0207. https://onlinelibrary.wiley.com/doi/10.1002/nme.7142 (2023).

Conference Talks

2025	M2i Conference	Papendal (the Netherlands)
2025	ECCOMAS composites	Vienna (Austria)
2025	European Solid Mechanics Conference	Lyon (France)
2024	Engineering Mechanics symposium	Papendal (the Netherlands)
2024	ECCOMAS	Lisbon (Portugal)
2024	Newfrac	Porto (Portugal)
2023	ECCOMAS composites	Trapani (Italy)
2023	CompTest	Girona (Spain)
2021	ECCOMAS composites (online)	Gothenburg (Sweden)

Tools & Software

Jive, C++, Python, Paraview, Matlab, Gmsh, LATEX, Linux

Languages

Dutch (mother tongue), English (professional level), German (elementary level), Italian (elementary level)

Discipline related Skills

- **Computational Modelling of Fracture & Fatigue**. Advanced cohesive zone modelling approaches for simulating fracture and fatigue.

- **Constitutive modelling**. Constitutive modelling of viscoplastic deformations in composites at finite strains.

- **Multiscale Modelling**. Spatial and temporal homogenization for fracture and high-cycle fatigue.

- **Advanced Discretisation Techniques (XFEM)**. XFEM approaches for mesh-independent cohesive cracks under static and cyclic loads.

- **Programming**. C++ programming in an in-house finite element code. Pre- and post-processing with Python and Matlab.

Other skills

- **Independent and collaborative**. I can work both independently and with others. During my PhD (and MSc), I performed independent research which has led (so far) to five first-author journal articles, of which one under review. In addition, I have worked with a colleague PhD candidate that resulted in a co-authored journal article.

- **Flexible**. I am flexible and able to perform in different fields. During my MSc thesis, I worked on multiscale modelling under strain localization. During my PhD, I worked on modelling fracture and fatigue with XFEM, anisotropic viscoplasticity at finite strains and time-homogenization for efficient high-cycle fatigue analyses.

- **Good communication skills**. During consortium meetings of my PhD project, I presented my progress to an audience of approximately 20-40 people from industry (Airbus, TNO, Solvay, Toray) and academia (University of Twente, TU Delft, TU Eindhoven, Warwick University). Every year, there were 2-3 of these meetings. Furthermore, I have presented at 7 international conferences in front of medium to large audiences (20-150 people).

Teaching experience

2024-2025	Lecturer (2 times), Structural Mechanics and Dynamics (CIEM5110)
2021-2024	Assistant Instructor (4 times), MSc course Introduction to the Finite Element Method (CIEQ5112)

Supervision of students (as daily supervisor)

2024   MSc thesis Stijn Platzer - *Implementation and evaluation of the shifted fracture method for crack propagation in fiber-reinforced polymer composites*

2022   MSc thesis Linda Dupain - *Modelling fatigue transition behaviour of FRP in mode I block loading*