Davide Biagini

Profile

Ph.D. candidate at TUDelft Aerospace Engineering investigating the compression after impact fatigue in carbon fiber reinforced polymers from a numerical and experimental point of view.

Education

2017–2020 **University of Bologna, Campus Forlì**,
Aerospace Engineering, Master of Science Degree, cum Laude.

2014–2017 **University of Bologna, Campus Forlì**,
Aerospace Engineering, Bachelor Degree.

Experience

Apr 2020–Ongoing **TU Delft, faculty of Aerospace Engineering**, Ph.D. Candidate.

- Implementation of numerical models to capture buckling and delamination propagation in CFRP using Abaqus CAE.
- Fatigue after impact testing using different SHM and NDI techniques like acoustic emissions, digital image correlation and ultrasonic c-scan.
- Signal analysis and machine learning strategies applied to the classification of acoustic emission signal for damage modes separation.

Aug-Dec 2019 **TU Delft, faculty of Aerospace Engineering**, Internship and M.Sc. Thesis.
Implemented a Python code to evaluate lattice structures fatigue behaviour using a simplified beam element progressive failure approach

Conference presentations

July 2022 **European Conference of Fracture**, *Madeira, Portugal*.
How should we define compression after impact fatigue growth in CFRP?

June 2023 **Comptest**, *Girona, Spain*.
CAI fatigue testing in CFRP: is the test representing what happens in real structures?

July 2023 **International Committee on Aeronautical Fatigue and Structural Integrity**, *Delft, The Netherlands*.
Compression after impact fatigue damage growth in CFRP

Publications

Davide Biagini, John-Alan Pascoe, René Alderliesten, Investigating apparent plateau phases in fatigue after impact damage growth in CFRP with ultrasound scan and acoustic emissions, International Journal of Fatigue, Volume 177,2023,107957, doi.org/10.1016/j.ijfatigue.2023.107957

Biagini D, Pascoe J-A, Alderliesten R. Investigation of compression after impact failure in carbon fiber reinforced polymers using acoustic emission. Journal of Composite Materials. 2023;57(10):1819-1832. doi:10.1177/00219983231163853

D. Biagini, J.A. Pascoe, R.C. Alderliesten, Experimental investigation of fatigue after impact damage growth in CFRP, Procedia Structural Integrity,Volume 42,2022,Pages 343-350,ISSN 2452-3216,https://doi.org/10.1016/j.prostr.2022.12.042.

Teaching

2022 **TU Delft, faculty of Aerospace Engineering**, *Main supervisor*.
Bachelor course in data analysis

2021 **TU Delft, faculty of Aerospace Engineering**, *Co-supervisor*.
Bachelor project 'design synthesis exercise'

Skills

Languages	Python, Matlab, Fortran
Frameworks	Keras, Tensorflow
FE tools	Abaqus cae
Utilities	Anaconda, Git, Latex
Communication	English (C1), Italian (native)