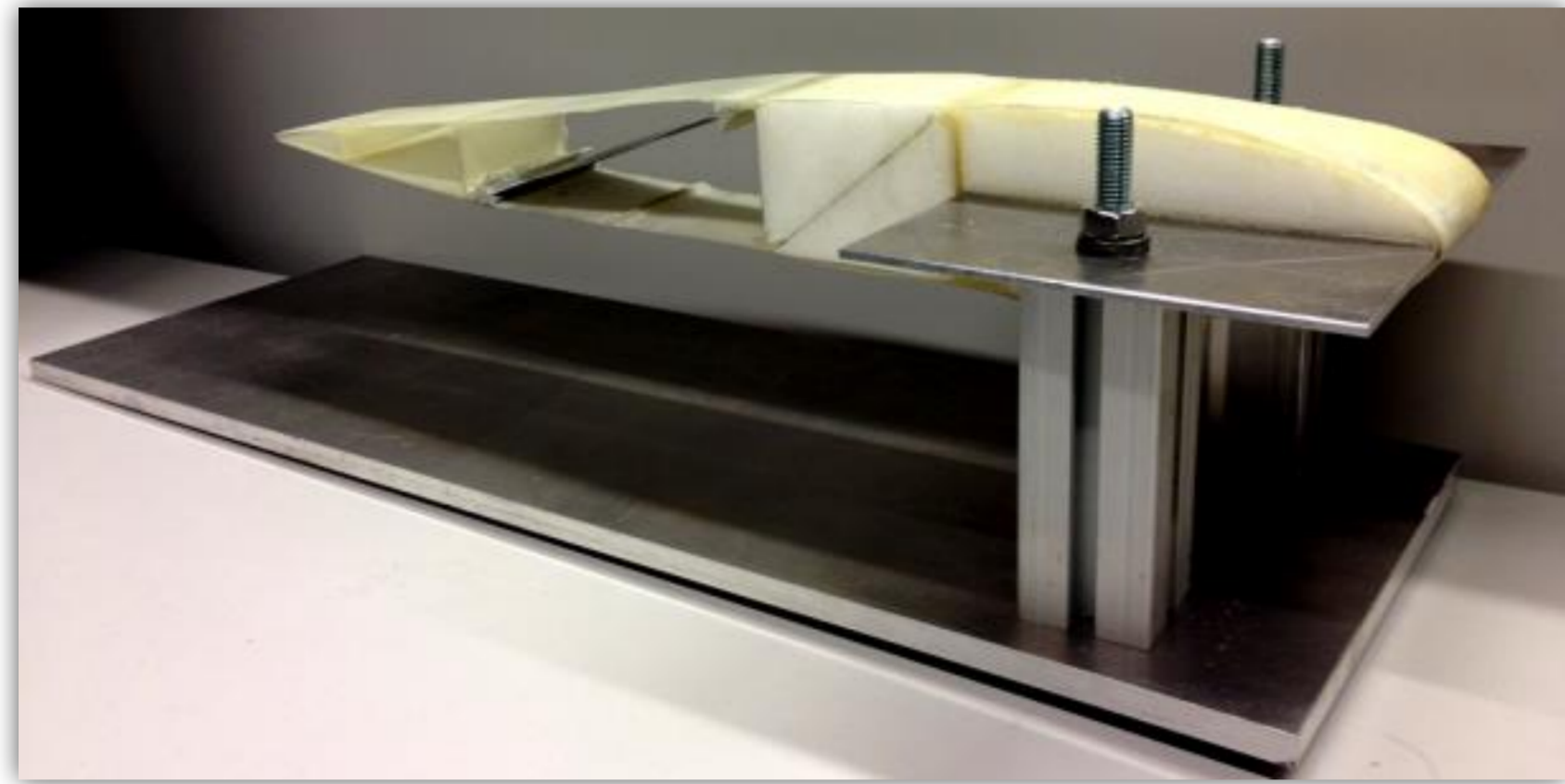


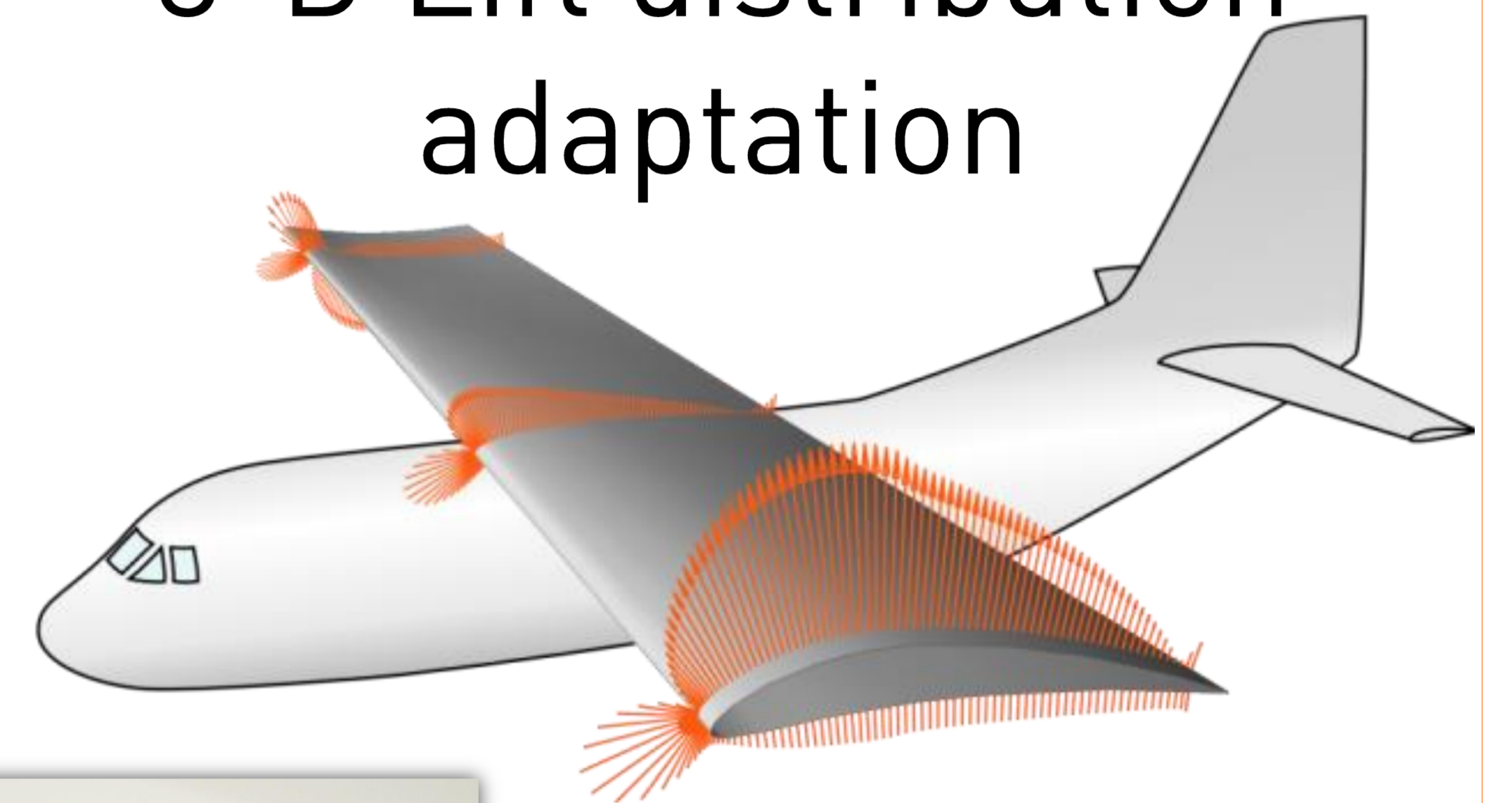
Andres F. Arrieta, Izabela Kuder, Giulio Molinari, Francesco Previtali, and Paolo Ermanni
ETH Zurich, Compliant Systems Group, Laboratory for Composite Materials and Adaptive Structures

Research activities

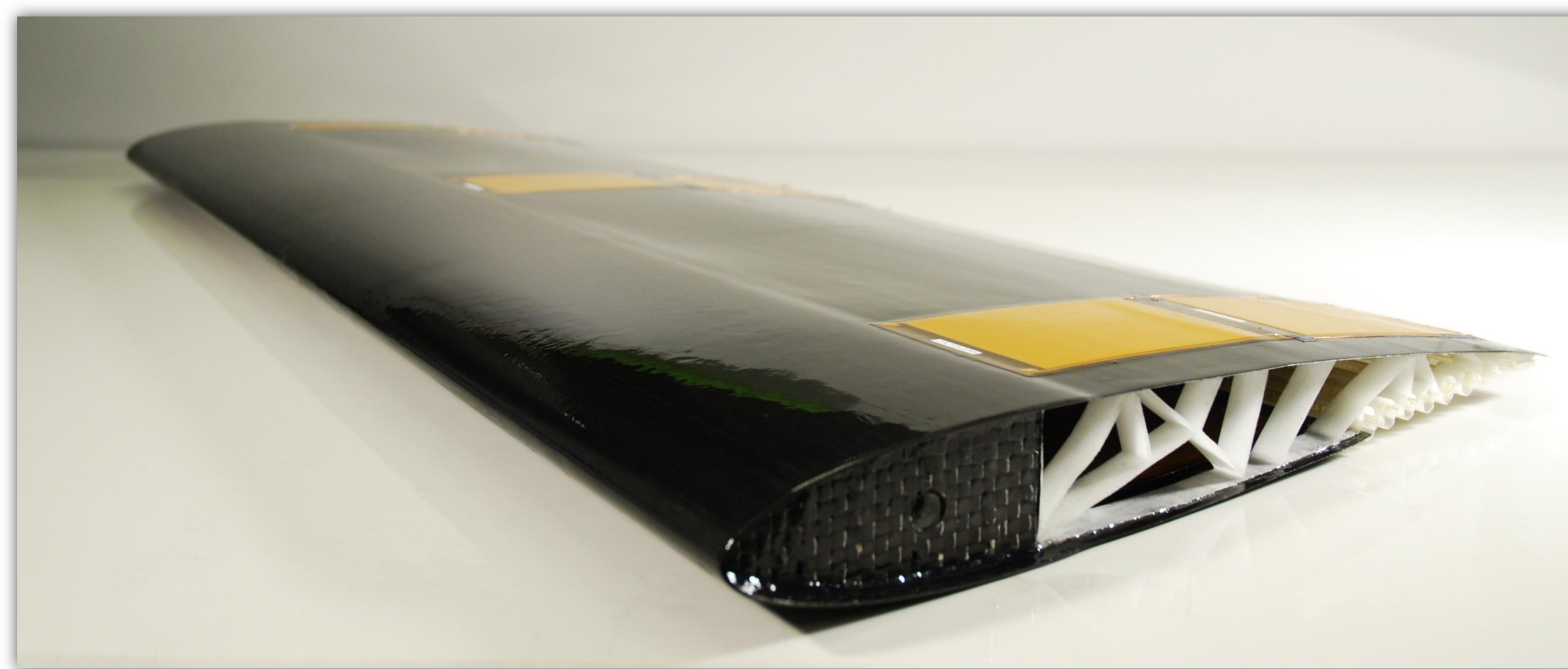
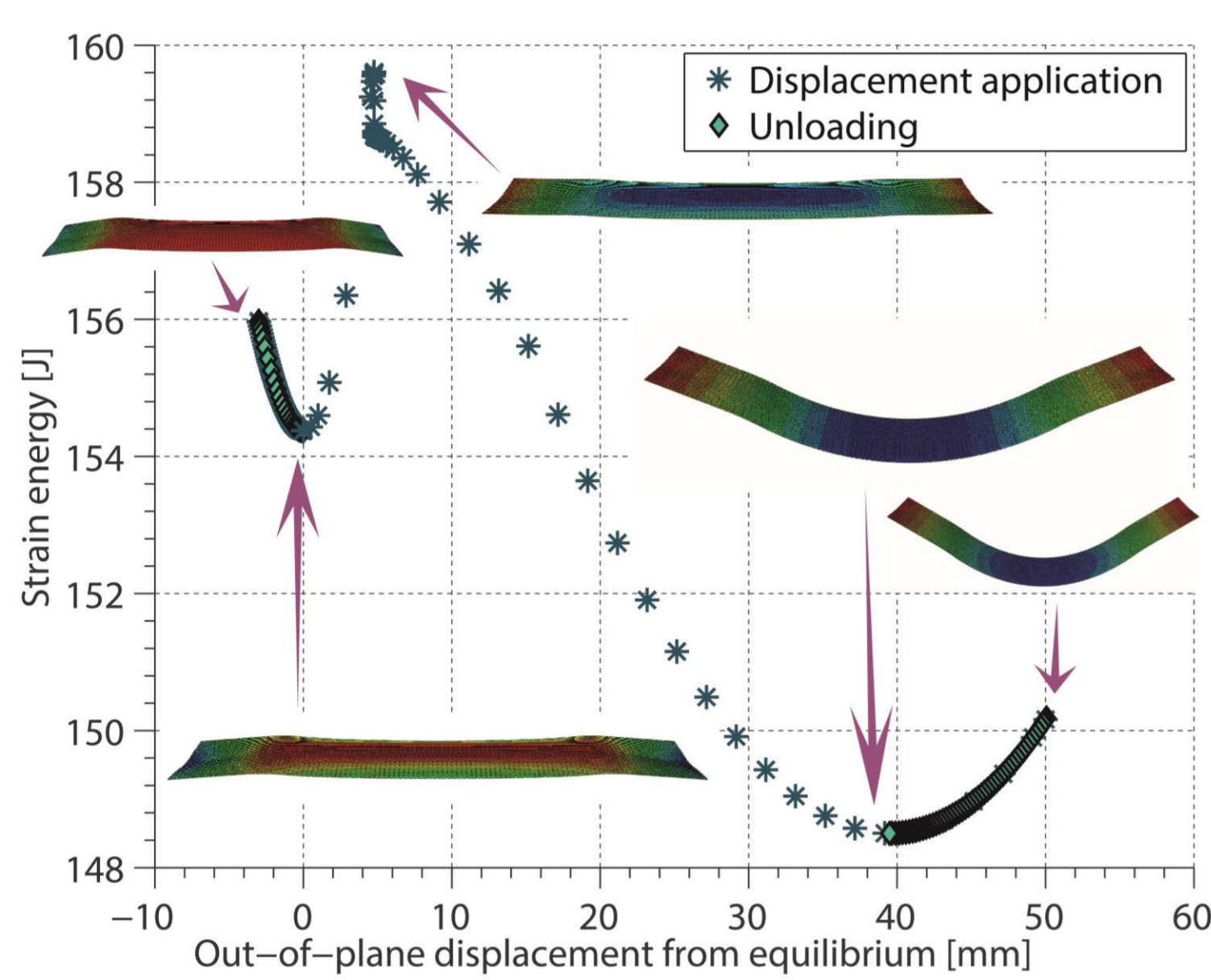
Distributed compliance



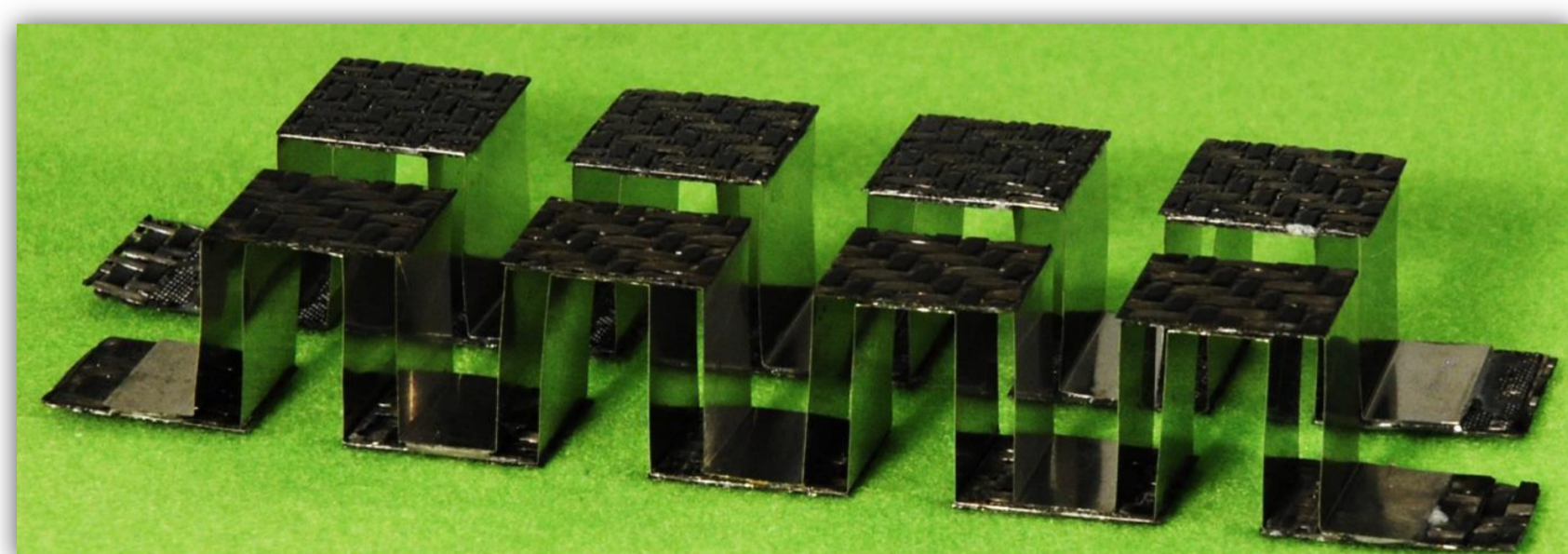
3-D Lift distribution adaptation



Variable Stiffness

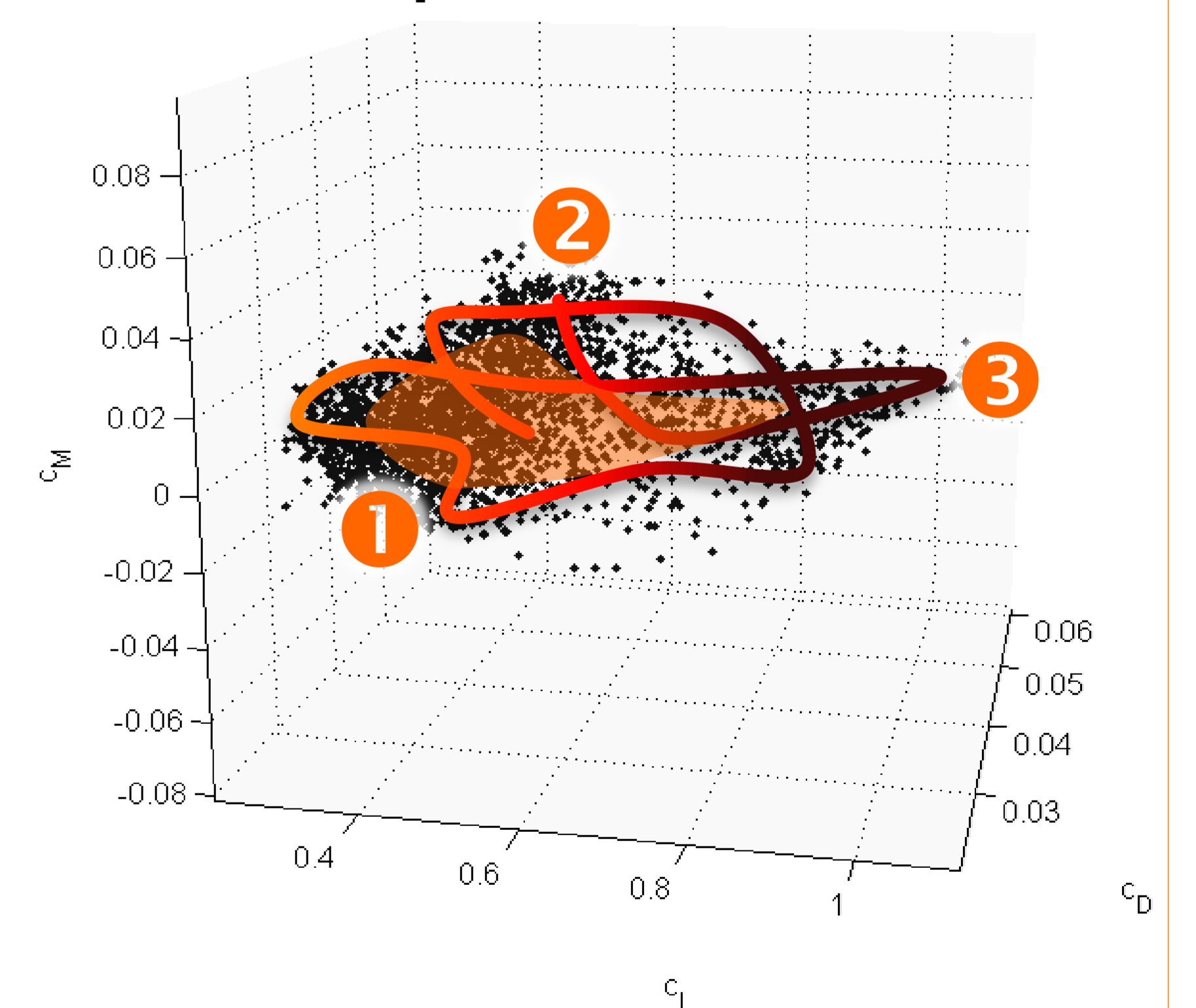
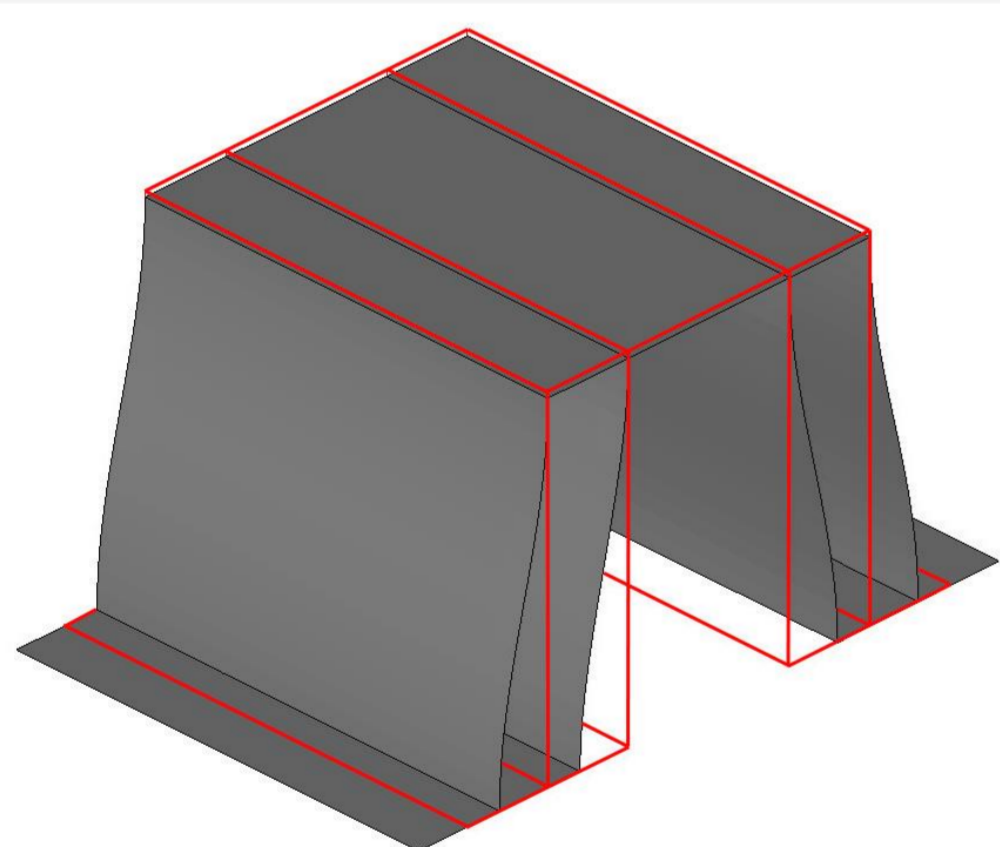


Morphing skins

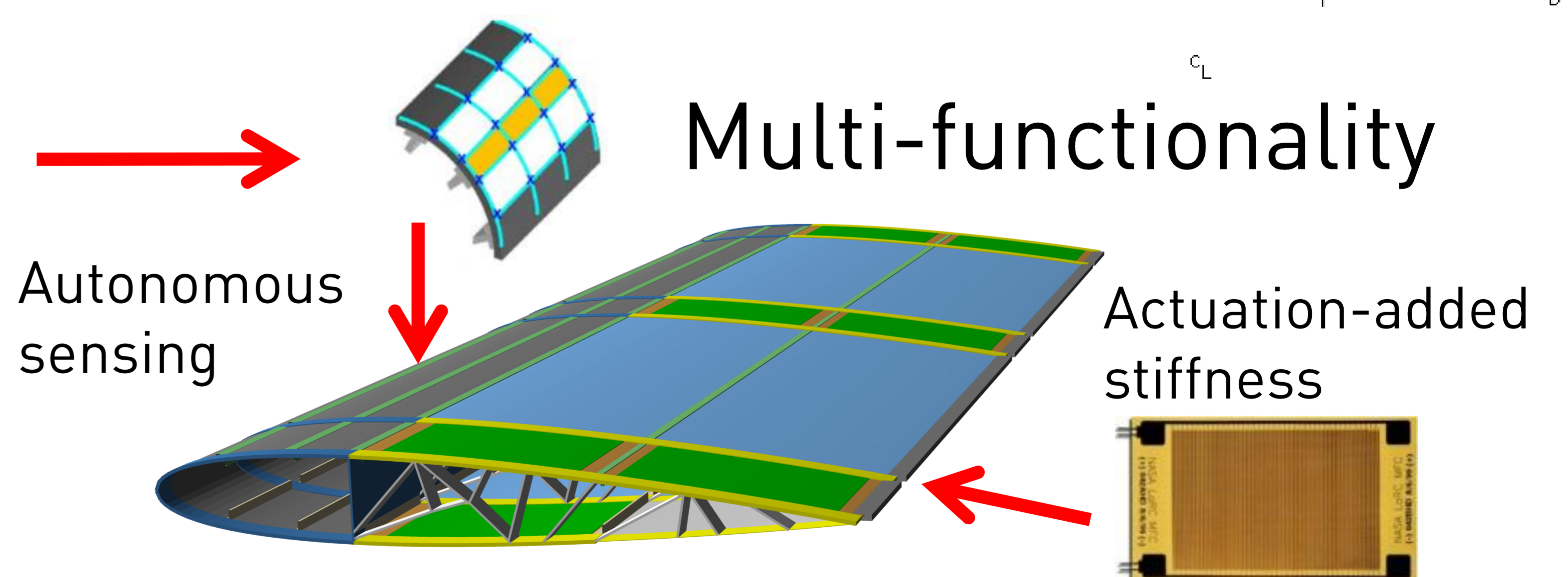
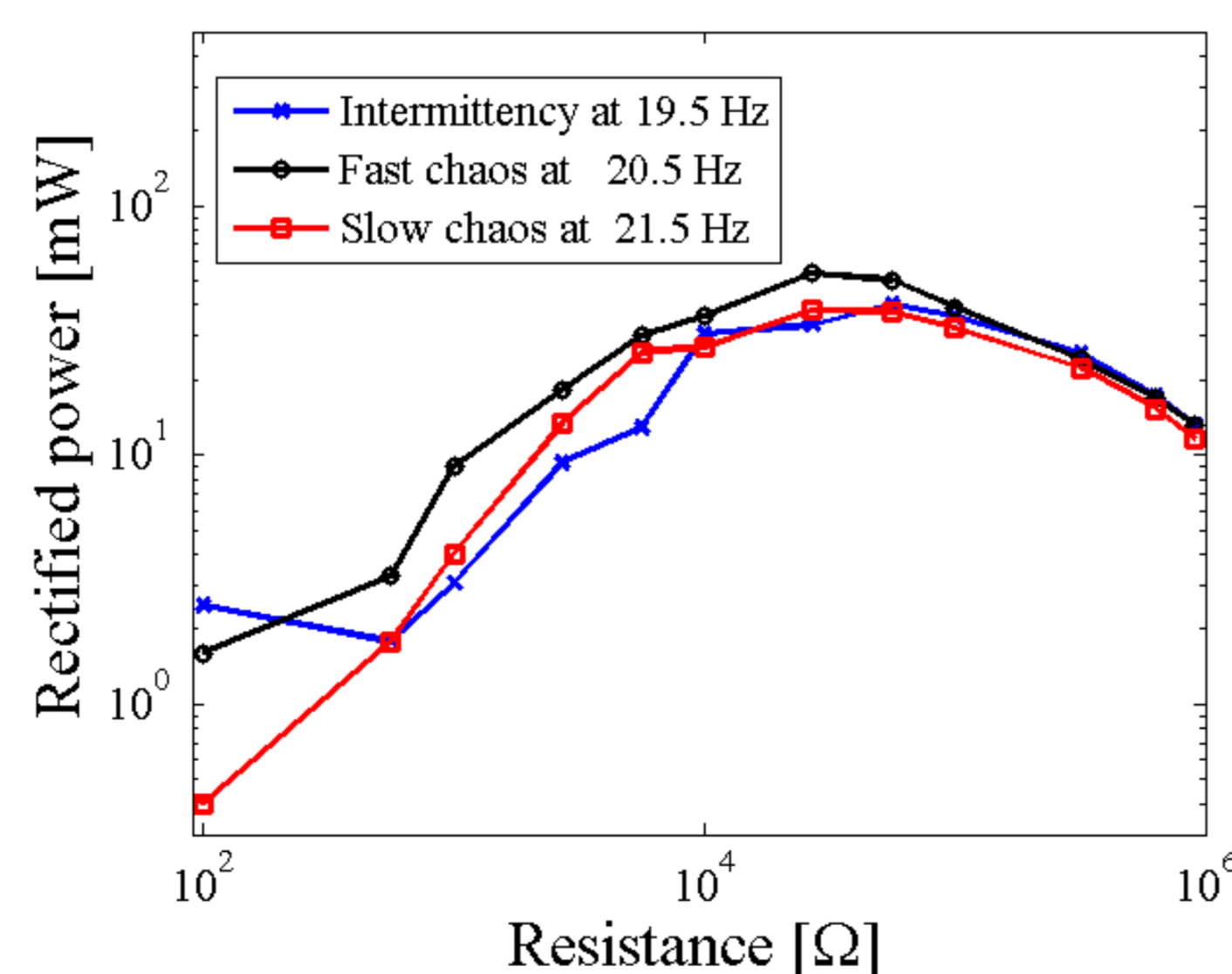
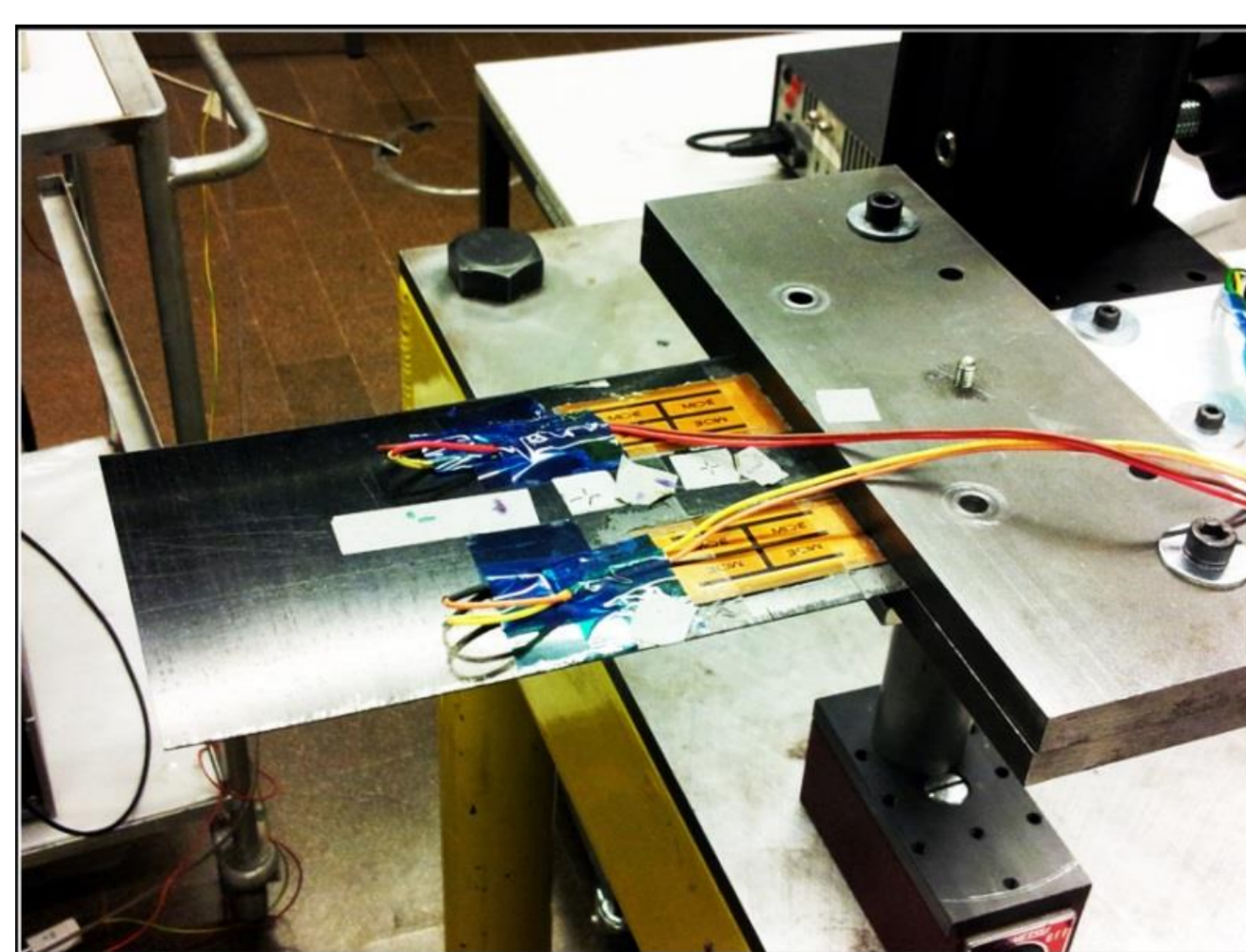


Morphing structures & Energy harvesting

Multi-disciplinary design and optimisation



Broadband energy harvesting



Publications

- I. Kuder, A. F. Arrieta, W. Raither and P. Ermanni. *Variable stiffness material and structural concepts for morphing applications*. Progress in Aerospace Sciences, 63, 33-55, 2013.
- G. Molinari, A. F. Arrieta and P. Ermanni. *Aero-Structural Optimization of 3-D Adaptive Wings with Embedded Smart Actuators*. 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 8 - 11 April 2013, Boston, Massachusetts, USA.
- F. Previtali, A. F. Arrieta and P. Ermanni. *Performance evaluation of a 3D morphing wing and comparison with a conventional wing*. 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 8 - 11 April 2013, Boston, Massachusetts, USA.
- A. F. Arrieta, O. Bilgen, M. I. Friswell and P. Ermanni. *Modelling and configuration control of wing-shaped bi-stable piezoelectric composites under aerodynamic loads*. Aerospace Science and Technology, 29, 453-461, 2013.
- A. F. Arrieta, T. Delpero, A. E. Bergamini and P. Ermanni. *Broadband energy harvesting with cantilevered bi-stable composites*. Applied Physics Letters, 102, 2013.
- F. Previtali and P. Ermanni. *Performance of a non-tapered 3D morphing wing with integrated compliant ribs*. Smart Material and Structures, 21, 055008, 2012.
- G. Molinari, M. Quack, V. Dmitriev, M. Morari, P. Jenny and P. Ermanni. *Aero-Structural Optimization of Morphing Airfoils for Adaptive Wings*. Journal of intelligent material systems and structures, 22, 1075-1089, 2011.