

Development of methods for deriving optimized shapes of morphing structures considering both aerodynamic performances and specific mechanical morphing boundary conditions

Target shapes for deflected positions of morphing structures shall be computationally derived. They have to be optimized regarding drag and lift properties and also mechanically feasible considering material strain. This is an important morphing specific boundary condition, which is linked both to the base shape and the deformed shape. Additionally, mechanical complexity should be taken into consideration, e. g. a smooth strain distribution or the required local radii modifications during morphing.

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