

FE model for bird strike simulation on ARALL leading edge

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Summary: This paper deals with the development of a Finite Element (FE) model for the simulation of a bird strike event on an innovative leading edge made of ARALL (ARamid Aluminium Laminate) material. To assess the reliability of the FE analyses, a preliminary model was developed aiming to simulate a tensile test, according to literature, involving ARALL specimens. Such model provided a good level of accuracy. So, the same modelling technique has been used for the bird strike simulation. Finally, the structural response of the ARALL leading edge has been compared against a conventional Aluminum one. Such a comparison has highlighted the capability of ARALL material in withstanding bird strike events with an improved performance.