

ADVANCED METALLIC STRUCTURE FOR AIRCRAFTS

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Abstract

A growing competition on the aeronautical market leads the aircraft manufacturers to invest on new technologies, which results on more efficient products. One of the fields having high potential for a better efficiency of the product is the airframe (aircraft structure). An optimized airframe results in great reduction on weight, manufacturing and maintenance costs. The latest Boeing and Airbus commercial programs show an important tendency: the continuous growing of CFRP (Carbon Fiber Reinforced Polymers) applications in airframes. However metallic materials still have a great potential on contributing to a more efficient airframe, under a new concept called Advanced Metallic Structure. This new concept states that the simple replacement of current for new, advanced and high performance metallic materials does not lead to a better overall performance. New metallic materials can succeed only if their use is established under a view that integrates materials, manufacturing processes and design concepts in a customized and optimized solution.

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