

Evaluation of the Lightning Strikes on Carbon Fibers Panels for Aircraft Structural Parts

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Abstract

Airliners are often subjected to dangerous atmospheric and weather hazards among which lightning strikes represent a threat for flight safety. Recently, the use of Carbon Fibers Reinforced Composites as structural parts in aircrafts as an alternative to traditional metallic materials. Unfortunately, most composites are not able to dissipate lightning currents as the traditional metals. Such ability must be reached by improving the overall conductivity of the composites by using MWCNT. Numerical studies can assist aircraft designer in evaluating the direct and indirect effects due to lightning strikes. In this paper the multiphysics features of the COMSOL® software are used to simulate the physical processes involved in lightning strikes hitting a panel of carbon fiber reinforced composites.