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A matlab based educational software for the study on the effect of cut-out in aircraft wings (Article)

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Abstract

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Cut-outs on aircraft wings are unavoidable due to the placement of fuel tanks and retraction of landing gear inside the wing. The stresses acting on an aircraft wing will deviate substantially before and after a cut-out is made and therefore it is crucial to perform stress analysis in an aircraft wing in order to ensure that the wing structure will be able to withstand the applied stress. Stress analysis of such structures is tedious and time consuming due to its statically indeterminate nature. A free stand-alone software based on MATLAB for the computation of stress due to the effect of cut-out in idealized wing torsion box has been developed. The main purpose is to provide the end-user (students or academicians) a useful and user-friendly tool to perform preliminary stress assessment of the effect of cut-out analysis for an idealized wing. © 2018 Authors.

Author keywords

Aircraft structures | Cut-out | MATLAB | Stress analysis | Wing

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