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Structural Analysis of a Transport Aircraft Wing

Alnazir Khalafallah Alatta, Mohammed Alnazir Abd Algader

Aeronautical Engineering Department, Engineering College, Karary University, Khartoum, Sudan,
alnazirkhalf@gmail.com

Tariq Hassan Alsonni, PHD, International College of Science and Technology, Khartoum, Sudan,
Int273@gmail.com

Eng. Abdul Aziz Abdul Majid Sulieman

Aeronautical Engineering Department, Engineering College, Karary University, Khartoum, Sudan

In this study the procedures of structural analysis of a typical transport aircraft wing has been followed. Firstly, the wing model has been drawn using CATIA® V5, this model consists of several structural components such as spars, ribs and skin. Secondly, the model has been exported into structural analysis software ANSYS ® 2016. Thirdly, pressure distribution has been created using MATLAB code (panel method) & CFD file data (fluent).and applied on the model. Finally The stresses, strains, deformations and safety factors where obtained for the model, it is found that the obtained stresses caused by the aerodynamic loads on the wing are within the design structural limits where the failure by yield or buckling has not been occurred. Keywords- structural, wing, pressure distribution.