

# Stress Analysis of an Aircraft Wing Subjected to Combined Flexural, Torsional and Transverse loadings

## Abstract:

This paper investigates the stress distribution in composite plates used to make some jet fighters' wings. The wing's vibration is assumed to be due to combined flexural, torsional and transverse loadings. Composite materials are being widely used in aircraft industries for the many advantages they provide. The possibility to use innovative composite materials for aircraft fuselage have been largely investigated and the advantage in weight offered, together with their good mechanical properties, has been demonstrated. The present analysis focuses on a fiber-reinforced wing that has Aluminum as the major element which is joined to the body of the aircraft using Titanium. The finite element software ANSYS is used to analyze the stress distribution throughout the wing in order to detect patterns and concentrations in critical areas.