

# **Impact of the fuselage damping characteristics and the blade rigidity on the stability of helicopter**

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## **Abstract**

The aim of this work is to compare in the system of blade articulations, the hydraulic and elastomeric dampers in order to reduce the vibration level in the helicopter rotors. Based on an aerodynamic model, a three-dimensional model of the composite material blade was developed. Numerical calculations on the developed model taking into account the aeroelastic interaction prove that the elastomer damper of viscoelastic type produces better results compared to other hydraulic damper.

The study of the blade stability depending on the orientation of the composite fibers is an important factor to determine the rigidity of the structure.

**Key words:** Composite materials, Aeroelastic, Aerodynamic, Blade, Vibration.