

Manoeuvring load reduction system design for the long-haul passenger aircraft

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The study considers a maneuvering load reduction system as applied to the prototype of a modern short-haul passenger aircraft equipped with a digital flight control system. The paper describes the system configuration and introduces the optimal structure based on the characteristic features of the flight control cueing, the power unit architecture and its component reliability. When calculating the parameters of this system, the mathematical model of the aircraft was used, this allows considering the element elasticity of its design. To evaluate the efficiency of the system for reducing the wing bending moments during maneuvering, we carried out the calculations, taking into account the flight control system features of the controlled element under consideration.

Keywords: maneuvering load reduction system, wing bending moment, normal acceleration, spoilers, ailerons, digital flight control system

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