

Aircraft Landing Process Simulation Using Multi-Body Multi-Dynamics Software

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Abstract : In this project, the landing process is simulated by using of multi-body dynamics commercial software. Various factors, including landing situations, aircraft structures and climate are used in this simulation. The purpose of this project is to determine the forces exerted on the aircraft landing gears in landing process in various landing conditions. For this purpose, the ADAMS multi-body dynamics software is used. Different scenarios based on FAR-25, including level landing, tail-down landing, crab landing are simulated. Results of dynamic simulation software with landing load factor obtained from the analytical solution are compared. The effect of fuselage elasticity on the landing load is studied. For this purpose, both of elastic and rigid body assumptions are used in the simulation process, and the results are compared and some conclusions are made.

Keywords : landing gear, landing process, aircraft, multi-body dynamics

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