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<+Course Name+>

<+Subject of report+>

Nikolaos Koukis

Personnummer: 930727T073
Group: D
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Contents

List of Figures

Abstract

This work deals with varius aspects of the *J35 Draken aircraft* performace. More specifically the report is devided into three main sections. In the first section we derive the excess thrust and envelope graphs and we also simulate for three optimization problems (reaching maximum altitude, maximum Mach number, etc) so that the ideal trajectory to fly with is found In the second part the C_{lp}, $C_{l\beta}$ constants are calculated after the processing of experimental data. In the final part, we deal with various stability and control aspects of the aircraft as well as simulating the execution of a looping maneuver

The report is intended for the *Flight Mechanics* course offered by the School of Engineering Sciences in KTH. For the executed simulations, the *MATLAB* technical computing language was used.

Keywords: J35 Draken, Envelope limits, Trajectory optimization, Rolling momment coefficient, Linear stability, Control systems design.