UNIVERSITAT POLITÈCNICA DE CATALUNYA
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Interplanetary trajectories

Example: Earth to Mars case

Report

Degree: Master's degree in Aerospace Engineering
Course: 220301 - Aerodynamics, Flight and Orbital Mechanics
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1 | Figure example formats

FIGURE

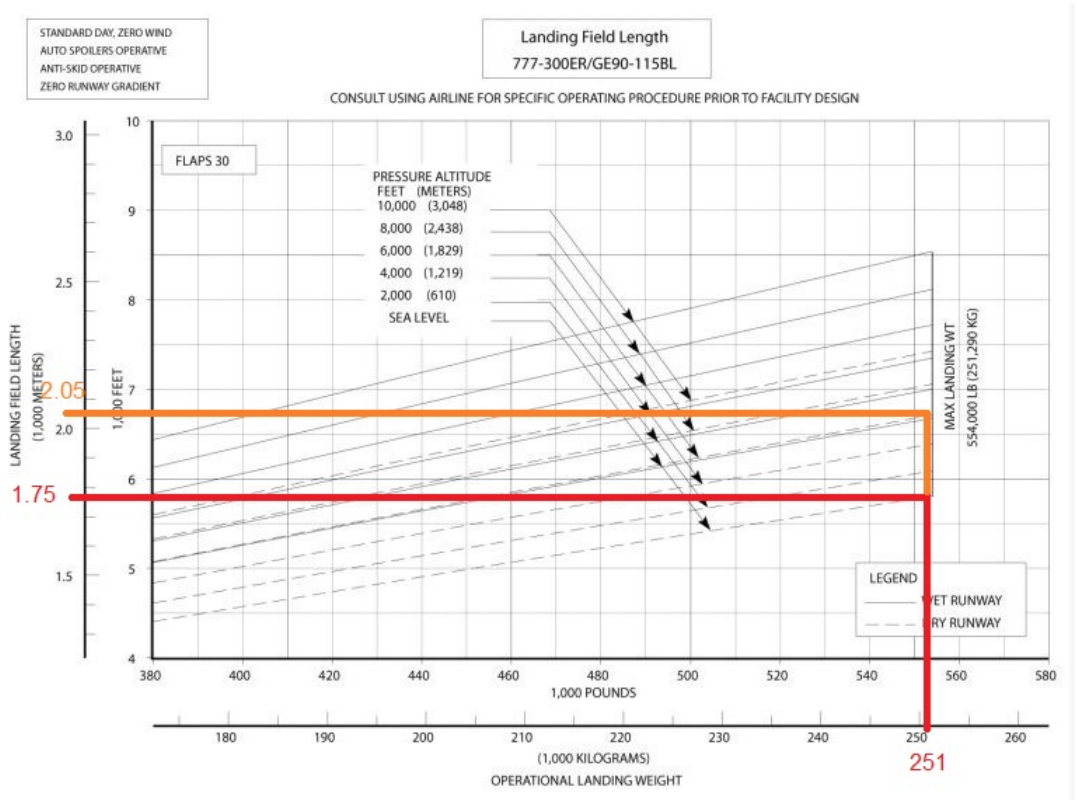

Figure 1.0.1: Landing distance vs MTOW for the Boeing 777.

TABLE

T_1	13 cm
T_2	21 cm
T_3	62 cm
T_t	95 cm

Table 1.0.1: Thickness after the materials correction factor.

2 | Aim

This projects aims to compute an interplanetary trajectory which, for a given ecliptic rectangular positions of two planets in two known time instances, is able to carry a spaceship with a unique impulse, from the first planet to the second.

3 | Theoretical background

Donades les posicions rectangulars ecl´ıptiques de dos planetes en dos instants coneguts, trobeu una traject'oria que porti una nau, en un sol impuls inicial, del primer al segon planeta en els instants previstos. Per aix'o,calculeu els elements ecl´ıptics de l''orbita de transfer'encia i les velocitats helioc'entriques de sortida i arribada, etc. (Per trobar les velocitats planetoc'entriques —que s´on molt importants— necessiteu les velocitats dels planetes, per'o no les dono aqu´ı.)

4 | Calculations and results

5 Conclusions

6 | Bibliography

[1] J. Calaf, "Treballs de Mecànica Orbital," 2017.