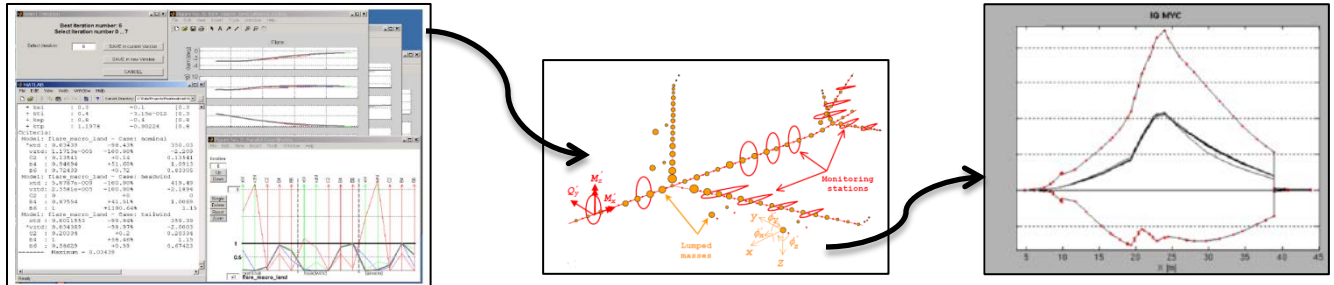


Internship, Bachelor Thesis, Master Thesis

In the Flight Physics Department of the Airbus Operations GmbH



Subject:

Investigation of Flight Control Law tuning for loads optimization and integration into the loads calculation process

Location: Airbus Operations GmbH, Hamburg Finkenwerder

Start: 01.08.2014

Duration: 6 month

Necessary skills:

- Student from the aeronautics department
- Flight Mechanics
- Control law and control systems (control theory)
- General overview of optimization algorithms
- Basic knowledge in Matlab or Fortran, C

Overview:

During aircraft preliminary design phase ground and flight loads are calculated in order to perform structural sizing of different components like the fuselage or the wings. Flight Control Law (FCL) and special loads reduction functions may be used in the design calculations to reduce the sizing loads levels, leading to weight savings usually (but also necessitating the related failure case investigation).

Given the FCL structure, some FCL parameters shall be optimized in order to achieve more alleviation margins on certain AC components.

In this scope an Electronic Flight Control System (EFCS) needs to be integrated into the existing flight loads calculation process. In addition an optimizer needs to be applied on this EFCS with respect to find the good parameters that provide additional loads reduction.