AERO UC3M PhD Position Open

Research task

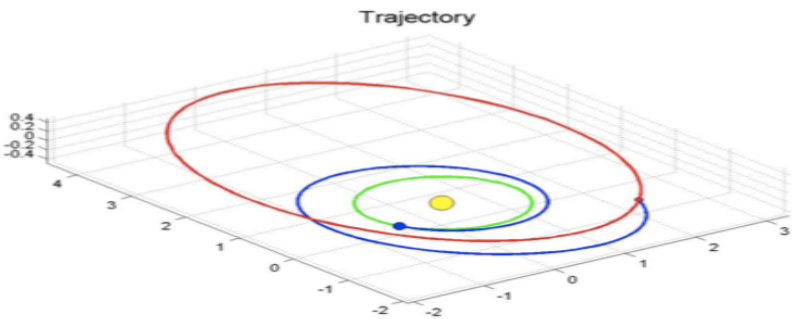
The **task** will be related with **optimal control** applied to **trajectory optimization in aerospace engineering**.

The goal of optimal control theory is to determine the control input that will cause a dynamical system to be steered from an initial state configuration to a final one, satisfying a set of path constraints, and at the same time optimize some performance criterion. Solving methods include indirect methods (analytic based) and direct methods (numerical based).

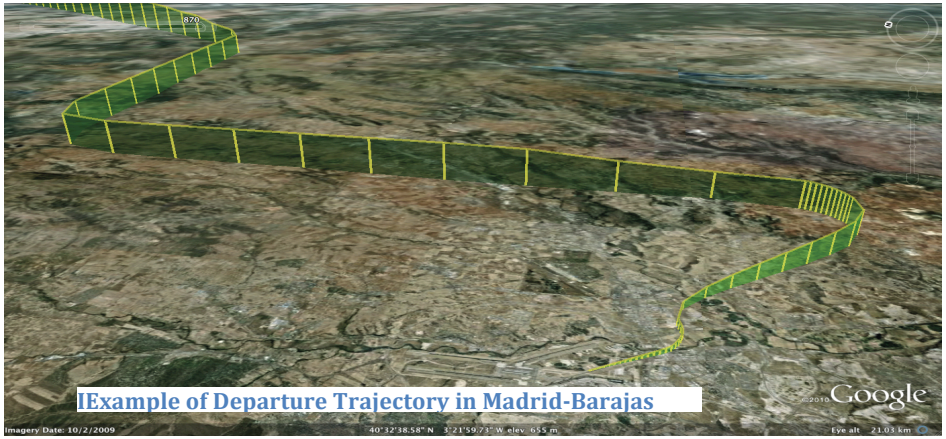
Arising applications in aerospace engineering are vast and due to that the topic is in certain way open. The focus, in any case, will be on **commercial aircraft trajectory planning**, e.g., 4D flight planning and stochastic optimal control within the framework of SESAR, and/or **space missions**, e.g., Low-thrust trajectories and under-actuated control.

Requirements and conditions

The ideal candidate will have a background in aerospace engineering (Master's level or equivalent) and optimization, programming skills, and solid skills in both writen and spoken english. Outstanding students with only a partial match to this list are encouraged to apply.



Example of Trajectory from the Earth to Comet Tempel



IExample of Departure Trajectory in Madrid-Barajas

The successful candidate will be enrolled in the Department of Bioengineering and Aerospace Engineering (Area of Aerospace Engineering) of the University Carlos III de Madrid (UC3M). The conditions in terms of salary and duration of the appointment are those determined by UC3M for PhD students. International secondments in prestigious universities and research centers will be granted.

To Apply

Email directly to Assistant Prof. Sanjurjo (msanjurj@ing.uc3m.es) and Assistant Prof. Soler (masolera@ing.uc3m.es) with:

- a CV.
- a motivation letter indicating your interest in the topic.
- two [non-mandatory, appreciated though] recommendation letters.

Deadline

Call for applications will be be open from April 2014 and will remain open until ideal candidate found. Intended start date (with some flexibility): September 2014.