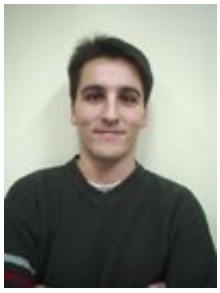


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## *EDUCATION*

**1995-2000** **Masters of Aeronautical Science Engineering,** from the Polytechnic University (UPM) of Madrid, SPAIN. Second in a course of over 200 graduates.

- Premio "**Francisco Arranz**" Accésit (*prize awarded by the Spanish Society of Aeronautical Engineers*)
- Premio **Nacional de Bachillerato** and **Extraordinario de Bachillerato** (*prizes awarded by the Spanish Ministry of Education*)

Currently completing the **Aeronautics Doctorate.**

**2000** Graduation Thesis *"Development of a Software Tool for Satellite Tracking and Mission Analysis"* at the National Higher School of Aeronautics and Aerospace (**SUPAERO**) of Toulouse, FRANCE

**2004** Summer Workshop on "Advanced Topics in **Astrodynamics**", Barcelona

**2005** Workshop on the "Utilization of Martian Climate Databases for Trajectory Computations", ESA/ESTEC

## *PROFESSIONAL EXPERIENCE*

**Since 2003** **GMV** (Flight Engineering Unit, Mission Analysis and Advanced System Engineering Division)

- ***Project Manager*** responsible for:
  - *ExoMars*: Design and analysis of the Entry, Descent and Landing trajectory for various strategies (conventional entry, inflatable entry).
  - *focusUES:* Development of a software tool to analyse ballistic atmospheric entry trajectories for any central body in the solar system.
  - *DISUP*: Upgrade of algorithms to compute lifetime prediction and risk assessment for DISCOS database (space debris).
- ***Project Engineer*** responsible for:
  - *GNCRLV*: Design of a Development Environment for the design of GNC for Reusable Launch Vehicles (RLV)
- ***Mission Analyst***, working off-site for the Mission Analysis Office at ESOC, Darmstadt. Responsible for the continuation of the mission analysis studies for the BepiColombo mission to Mercury.

**2001-2003** **ESA/ESOC (European Space Operations Centre) as GMV contractor**

- ***Mission Analyst*** in the Mission Analysis Office responsible for:
  - *BEPICOLOMBO Mission to Mercury:* Multiple studies carried out supporting this cornerstone mission definition and reassessment, including among others: interplanetary trajectory optimization, launch window calculation, interplanetary navigation, guidance strategies, orbital evolution, in-orbit precise determination, lander descent strategies.

- *SMART-2*, *Rosetta:* Support to the mission analysis activities.

**2001** **GMV** (Flight Engineering Unit, Mission Analysis Division)

- ***Project Engineer*** responsible for:
  - REMASE: Development of a Mission Analysis Software Library for the observation satellite ENVISAT.

**2000** **Fellowship at GMV (Global Navigation Satellite Systems Unit)**

- ***Project Engineer*** responsible for:
  - EGNOS CPFPS: Design and development of a precise orbit determination algorithm for GPS/GLONASS/GEO.

## *LANGUAGES*

- **Spanish:** Mother **tongue**
- **English:** Fluent
- **French:** Mother tongue level
- **German:** Intermediate
- **Italian:** Intermediate

## *COMPUTER SKILLS*

**Languages**: Fortran 77, C, UNIX scripts shells, VisualBasic.

**Platforms**: Sun OS, Windows, LINUX

**Tools:** MATLAB, Gnuplot, Latex, MS Excel, IDL

## *PUBLICATIONS*

- Gil J., **Corral C.**, Graziano M., "Exomars Alternative Escape Trajectories with Soyuz/Fregat", New Trends in Astrodynamics and Applications II, Princeton, New Jersey, June 2005
- **Corral C.,** Jehn R., Campagnola S., "BepiColombo Launch window Design Based on a Phasing Loop Strategy", AAS/AIAA Astrodynamics Specialist Conference, Providence, Rhode Island, August 2004
- Campagnola S., Jehn R., **Corral C.,** "Design of Lunar Gravity Assist for the BepiColombo Mission to Mercury", AAS 04-130, AAS/AIAA 14th Space Flight Mechanics Meeting, Maui, Hawaii, February 2004
- Jehn R., **Corral C.,** Giampieri G., **"**Estimating Mercury's 88-day libration amplitude from orbit", Planetary Space Science 52, 727-732, December 2003
- Jehn R., Cano J.L., **Corral C.**, Bello M., "Interplanetary Navigation During ESA's BepiColombo Mission to Mercury", AAS 03-201, 13th AAS/AIAA Space Flight Mechanics Meeting, Ponce, Puerto Rico, February 2003
- **Corral C.**, Jehn R., "BepiColombo Navigation during the Flybys at Venus and Mercury", Proceedings of the 5th International ESA Conference on Guidance, Navigation and Control Systems, Frascati, Italy, October 2002
- MAO (Mission Analysis Office at ESA/ESOC) Working Papers 432, 439, 452, 464, 466, 477 (in collaboration with R. Jehn *et al*) summarizing the mission analysis for BepiColombo.

## *INTERESTS*

- Neuroscience, Computational Neuroscience, Ethology (Primates), Ecology.
- Travelling, music, cinema, reading, arts.