



The **Laboratorio de Ingeniería Mecánica** (Mechanical Engineering Laboratory – <http://lim.ii.udc.es>) at the University of A Coruña (Ferrol, Spain) is looking for a PhD candidate to join their team.

The topic of this PhD thesis will be the **optimization and optimal control of the dynamics of rigid and flexible multibody systems**. The research project will take advantage of the dynamic and sensitivity analysis capabilities of the MBSLIM library (MultiBody Systems at LIM) for the calculation of gradients of objective functions and constraints, when the algorithms require them. The idea is to develop a library composed of both third-party and in-house optimization algorithms based on the best-suited algorithms for constrained optimization and optimal control of multibody systems.

The candidate will work together with the Laboratorio de Ingeniería Mecánica team on both the theoretical and implementation aspects of the research. We pursue a strong background on optimization and we will also train the candidate on the basics of dynamics and sensitivity of multibody systems including complex phenomena, like flexibility, contact-impact and friction, etc.

Implementing inside MBSLIM presents advantages because of the huge amount of code already available but also a challenge because the new code has to integrate with the already existing one. Candidates must hold a bachelor's and a Master's degree on Mechanical Engineering, Computer Science, or a related field. Programming skills, especially in Fortran, Matlab, and C++ will be positively valued.

Applications and inquiries must be addressed to Dr. Daniel Dopico ([ddopico@udc.es](mailto:ddopico@udc.es)). Applicants must submit a CV and a transcript of their bachelor's and Master's degrees qualifications.

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