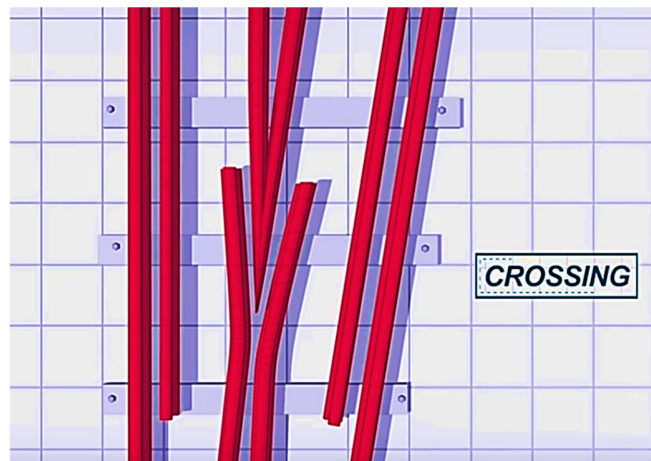


Announcement Master's Thesis

Development of a contact model for the magnetic track brake sliding along railway switches and crossings

Within this master's thesis, a numerical frictional impact and contact model will be developed to analyze the contact between the magnetic track brake (MTB) and the rail during braking along switches and crossings (<https://www.youtube.com/watch?v=ZuR5QTlfOzk>). The aim is to identify simplified yet accurate and efficient methods for modeling the contact problem, particularly within multibody dynamics. An existing simplified quasi-static contact and braking model, previously used for contact analysis between the MTB and straight rail, will be extended to address the transient case of impact and braking along switches and crossings.



What is expected to be done in this study?

- Mathematical modeling of the mechanical impact and contact problem between two bodies
- Extending the model to apply it to the context of magnetic track brake operation during braking along switches and crossings
- Numerical testing and verification of the developed model through simulations

Your profile:

- Good knowledge of the basics of mechanics
- Good programming skills in SIMPACK/MATLAB/etc. or having the motivation to learn it
- Independence, a high level of motivation and problem-solving skills

The project is carried out within the CD Laboratory for Enhanced Braking Behaviour of Railway Vehicles. If you are interested in working on this master's thesis with us and would like to join our team, please contact us by sending a short email.

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