

Title: Zermelo navigation, spacetimes and Finsler Geometry

Abstract: In this talk, we will show how classical spacetimes can be used to solve a non-relativistic problem, namely, the Zermelo problem of navigation. Recall that the Zermelo problem consists of finding trajectories that minimize the time in the presence of a wind or current. If the wind does not depend on time, then the problem can be solved with the help of Finsler Geometry, but when we consider a time-dependent wind, the solution can be accomplished using lightlike geodesics of a certain spacetime. In this context, it naturally arises the notion of Finsler spacetimes and we will also discuss Finsler spacetimes as a natural generalization of classical spacetimes in the presence of anisotropy.

#### REFERENCES

- [1] M. A. Javaloyes and M. Sánchez. On the definition and examples of cones and Finsler spacetimes. *Arxiv e-prints*, arXiv:1805.06978 [math.DG].