



## DYNAMICAL SYSTEMS SEMINAR

# Finsler Geodesic Flows and Applications

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Mini-auditorium / MAT

**Abstract.** In this talk, we present some applications of results about the geodesic flow of a Finsler surface to its own geometry. In a few words, a surface in which each tangent plane is (differentiably) endowed with a norm is called a Finsler surface. We know from the elementary linear algebra that an inner product induces a norm, but not all the norms come from inner products. In this sense, this talk will target the question: when a Finsler surface is in fact Riemannian? In other words, when the norm on each tangent plane of a Finsler surface come from an inner product (that is: from a Riemannian metric on  $S$ )? We shall see that the dynamics of the geodesic flow can help us finding some answers to this question.

## References

- [1] BAO, David; CHERN, S-S and SHEN, Zhongmin. *An introduction to Riemann-Finsler geometry*. Springer, 2012.
- [2] CHIMENTON, Alessandro G.; Ruggiero, Rafael; GOMES, José B. *Transitive of the geodesic flow of compact surfaces without conjugate points and higher genus, and applications to Finsler rigidity problems*. Houston Journal of Mathematics. 2015.