

# Minimal surfaces and Zoll metrics

Lecturer: Andre Neves

## Lecture 1 - Introduction to minimal surfaces

I will cover the basic results for the theory of minimal surfaces namely, first and second variation formula, Morse index, and regularity statements.

## Lecture 2 : Minimal surfaces on negatively curved manifolds I

I will outline the basic approach of the paper "Counting minimal surfaces in negatively curved 3-manifolds"

## Lecture 3: Minimal surfaces on negatively curved manifolds II

I will outline the basic approach of the paper "Minimal Surface Entropy and Average Area Ratio"

## Lecture 4 : Zoll metrics on spheres I

I will introduce the construction of Zoll metrics on  $S^2$ -spheres.

## Lecture 5: Zoll metrics on spheres II

I will outline the basic approach of the paper "Riemannian metrics on the sphere with Zoll families of minimal hypersurfaces"