

# MATH 635 - Variational Theory of Geodesics

A Ressegetes Stery

May 6, 2024

## Contents

1	The Variation Field	2
2	The First Variation Formula	2
3	Curvature Tensors	2
4	The Second Variation Formula	2
5	The Bonnet-Myers Theorem	2
6	Jacobi Fields	2
7	Surfaces of Constant Curvature	2
8	Conjugacy of Points	2
9	Covering and Completeness	2

- 1 The Variation Field**
- 2 The First Variation Formula**
- 3 Curvature Tensors**
- 4 The Second Variation Formula**
- 5 The Bonnet-Myers Theorem**
- 6 Jacobi Fields**
- 7 Surfaces of Constant Curvature**
- 8 Conjugacy of Points**
- 9 Covering and Completeness**