Honours Thesis Title

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Acknowledgments

Paragraphs thanking people.

Abstract

Overview of thesis goes here

Contents

Chapter 1

Geometry

1.1 Riemannian Geometry

1.1.1 Isometries

A transformation that preserves the shape of a space called an *isometry*.

Definition 1.1.1. (Isometry)
An *Isometry* of a Riemannian manifold (M, g) is a diffeomorphism $f : M \to M$ that preserves the metric (**?**). eg, if $f(z) = z'$ is an isometry then

$$g_p(X, Y) = f^* g_p(X, Y) = g_{f(p)}(f_* X, f_* Y)$$

In coordinates this becomes

$$g_{kl}(z) dx^k dx^l = g_{ij}(z') \frac{\partial z'^i}{\partial z^k} dx^k \frac{\partial z'^j}{\partial z^l} dx^l$$

1.1.2 Refs

Testing of references: Bagger and Xiong (1). Hitchin (2).

Chapter 2

Title

2.1 Section

2.1.1 Subsection

Chapter 3

Title

3.1 Section

3.1.1 Subsection

References

[1] Jonathan Bagger and Chi Xiong. N=2 Nonlinear Sigma Models in N=1 Superspace: Four and Five dimensions. 2006.

[2] N. J. Hitchin, A. Karlhede, Ulf Lindström, and M. Roćek. Hyperkähler Metrics and Supersymmetry. *Commun. Math. Phys.*, 108:535–589, 1987.

Appendix A

Riemannian Geometry

Appendix B

Selected Proofs