# Contents

1 Introduction .................................................. 1
   1.1 Thesis Background .................................. 1
   1.2 Thesis Goals and Approach .......................... 3
      1.2.1 Thesis Objective ............................... 3
      1.2.2 Project Goals .................................. 3
      1.2.3 Beneficiary Fields of Research ............... 3
      1.2.4 Timeframe ...................................... 4
      1.2.5 Spatial Framework ............................. 4
      1.2.6 Thesis Approach ............................... 4
   1.3 Thesis Structure ...................................... 5
References .................................................. 6

2 Site Description ........................................... 7
   2.1 General Overview of the Area ....................... 7
      2.1.1 Bijambare Protected Landscape .......... 7
      2.1.2 Geology ........................................ 9
      2.1.3 Hydrology ..................................... 12
      2.1.4 Climatic Characteristics .................. 13
   2.2 Caves ................................................ 17
      2.2.1 Speleological Explorations .............. 17
      2.2.2 Srednja Bijambarska Pećina ............... 19
References .................................................. 22

3 Materials and Methods .................................. 23
   3.1 Introduction .......................................... 23
   3.2 Atmospheric Parameters ............................. 24
      3.2.1 Cave Monitoring System ................... 24
      3.2.2 Gemini Tinytag Data Loggers .......... 24
      3.2.3 USB Stick Sensors ............................ 27
      3.2.4 Diver and Baro Sensors ................... 28
      3.2.5 Air Velocity Sensor ........................ 29
      3.2.6 Handheld Carbon Dioxide Sensors ....... 29
# From Soil to Cave: The Inorganic Carbon in Drip Water

## Introduction

- Introduction to the study of inorganic carbon in drip water.

## Results

- **Drip Sites**: Analysis of carbon fluxes and characteristics.
- **Pool Water**: Examination of carbon dynamics in pool environments.

## Discussion

- **The Characteristics and Classification of Drip Sites**
- **The Evolution from Soil to Sampling Point**
- **The Evolution from Dripping Site to the Equilibrium with Cave Environment**
- **The Fluxes of Carbon Dioxide**

## Conclusions

- Summary of findings.

## References

- List of sources cited in the study.

---

# Calcite Deposition

## Introduction

- Overview of calcite deposition processes.

## Precipitation Rate Theory

- Theoretical framework for calcite growth.

## Results

- Data on calcite deposition rates.

## Discussion

- **Parameters Controlling Calcite Deposition**
- **Predicted Growth Rates**
- **Impact of Droplet Splashing on the Measured Deposition Rates**
- **Impact of the Incomplete Solution Equilibration Process on the Measured Deposition Rates**

## Conclusions

-总结 of the study.

## References

- Additional reading material.

---

# The Isotopic Imprint

## Introduction

- Exploration of isotopic composition in drip water.

## Results

- Isotopic analysis and implications.

## Discussion

- **Impact of Droplet Splashing on the Measured Deposition Rates**

## Conclusions

- Final remarks.

## References

- Further reading and references.

---

# General Conclusions

## Summary of the Inorganic Carbon Fluxes in the Unsaturated Zone

- Overview of carbon fluxes.

## Scale-Up to Global Level

- Extension to global carbon cycle.

## Open Questions and Further Research Possibilities

- Areas for future investigation.

## Reference

- Further reading and credits.
Sources and Transport of Inorganic Carbon in the Unsaturated Zone of Karst
Milanolo, S.
2016, XIV, 157 p. 61 illus., 26 illus. in color., Hardcover
ISBN: 978-3-319-29307-3