

Iron samples with XAS

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Chapter 1

Introduction

Chapter 2

Phosphorus and Iron Cycling in the Aquatic System

The Baltic Sea and the water area in front of Finland is greatly affected by soil erosion and aquatic eutrophication. The agriculture in the coastal nations plays a key role in the soil-originating P load in aquatic system.

2.1 Soil as a Carrier of Fe and P

2.2 Fe Cycling in Sediment and Fate of P

2.3 The Effects of C/Fe Ratio

Chapter 3

X-ray Absorption Spectroscopy

X-ray absorption spectroscopy focuses on studying how x-rays are absorbed above and below the element specific jumps in the absorption cross-section called absorption edges.

3.1 X-ray Absorption and Fluorescence

3.2 Theoretical Description of XAS

3.3 Transmission and Fluorescence

Chapter 4

Measurement setup

4.1 Setup

4.1.1 Monochromators

4.1.2 Preparations for Anaerobic Samples

Chapter 5

Sample Preparation

5.1 Reference Samples

5.2 Samples

5.2.1 Soil Samples

5.2.2 Slurries

5.2.3 Anaerobic Slurries

Chapter 6

Results and Analysis

6.1 Analysis

6.1.1 Data Reduction

6.1.2 Data Modelling

6.2 Measurement results

6.2.1 Soil Samples

6.2.2 Slurries

6.2.3 Anaerobic Slurries

Chapter 7

Conclusion

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