

# Bachelor Thesis

## TEM at Martenhofer lake (filler title)

Peter Balogh

e12202337@student.tuwien.ac.at

Matr.Nr. 12202337

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Supervisor: Associate Prof. Dr.rer.nat. Adrian Flores-Orozco

### Abstract

Abstract of the thesis

### 1 Introduction

Introduction including: Objective: Create a model of the subsurface resistivity at Martenhofer Lacke using the transient electromagnetic method.

Hypothesis: An optimal lambda can be found for the TEM data gathered at Martenhofer Lacke by using the L-Curve method.

Research questions:

- How suitable is the transient electromagnetic method for the investigation of the resistivity of the subsurface at the Martenhofer Lacke?
- Which configuration of the TEM method is most suitable for the investigation of the Martenhofer Lacke?
- Is the L-curve method suitable for the determination of the optimal lambda for the TEM data?
- Which conditions are necessary for the L-curve method to be applicable to the TEM data?

### 2 Materials and Methods

#### 2.1 State of the Art

[write here]

##### 2.1.1 Common resistivity values

Some common values for resistivities can be found in [galazoulas2015large].

### 3 Results

### 4 Conclusion

#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### Data availability

All data and Python routines associated with this study are available open-source to facilitate full reproducibility of the results on github (<https://github.com/pb-tuwien/Geophysics.git>).

## References

- [1] W. Dorigo, I. Himmelbauer, D. Aberer, L. Schremmer, I. Petrakovic, L. Zappa, W. Preimesberger, A. Xaver, F. Annor, J. Ardö, et al. “The International Soil Moisture Network: serving Earth system science for over a decade”. In: *Hydrology and earth system sciences* 25.11 (2021), pp. 5749–5804.