

# **Experimental Protocols**

*Testing Variable Spacetime Impedance Theory*

Grant Lindblom

2026

## **Experimental Protocols: Testing Variable Spacetime Impedance Theory**

This document presents experimental designs and protocols for testing predictions of Variable Spacetime Impedance Theory through tabletop experiments, observational tests, and computational simulations.

### **Abstract**

Variable Spacetime Impedance Theory (VSIT) makes specific, falsifiable predictions about the behavior of the vacuum as a physical medium. This document outlines experimental protocols designed to test these predictions through direct measurement and observation.

The experiments described herein are designed to probe:

- **Vacuum Impedance Variations:** Direct measurement of spatial and temporal variations in the characteristic impedance of free space.
- **Gravitational Coupling:** Tests of the relationship between impedance gradients and gravitational effects.
- **Topological Defects:** Detection and characterization of vacuum lattice defects and their interactions.
- **Non-Linear Dielectric Response:** Measurement of vacuum saturation effects at high field strengths.

Each experimental protocol includes detailed setup procedures, measurement techniques, expected results under VSIT, and comparison with standard model predictions. These experiments are designed to be reproducible and provide clear, quantitative tests of the theory's predictions.

# **Contents**

## **Introduction**

**1**

# Introduction

This document presents experimental protocols for testing Variable Spacetime Impedance Theory (VSIT). The theory makes specific, quantitative predictions about the behavior of the vacuum as a physical medium, and these experiments are designed to test those predictions through direct measurement and observation.

## Experimental Philosophy

The experiments described in this document follow a systematic approach:

- **Reproducibility:** All protocols include sufficient detail for independent replication.
- **Quantitative Predictions:** Each experiment tests specific, measurable quantities predicted by VSIT.
- **Control Experiments:** Standard model predictions are explicitly compared with VSIT predictions.
- **Systematic Uncertainties:** Measurement techniques and error analysis are documented for each protocol.

## Organization

This document is organized by experimental category:

- **Tabletop Experiments:** Laboratory-scale tests that can be performed with standard equipment.
- **Observational Tests:** Tests using astronomical and cosmological observations.
- **Computational Simulations:** Numerical tests of theoretical predictions.

Each experimental protocol includes:

1. Theoretical background and VSIT predictions
2. Experimental setup and procedures
3. Measurement techniques and data analysis
4. Expected results and comparison with standard model
5. Discussion of systematic uncertainties and limitations



# Bibliography