

Gravitational Lensing Einstein Rings

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Abstract

Light deflection in gravitational fields.

1 Introduction

This report presents computational analysis of gravitational lensing.

2 Mathematical Framework



Figure 1: Primary analysis results.

3 Secondary Analysis



Figure 2: Secondary analysis comparison.

4 Parameter Study

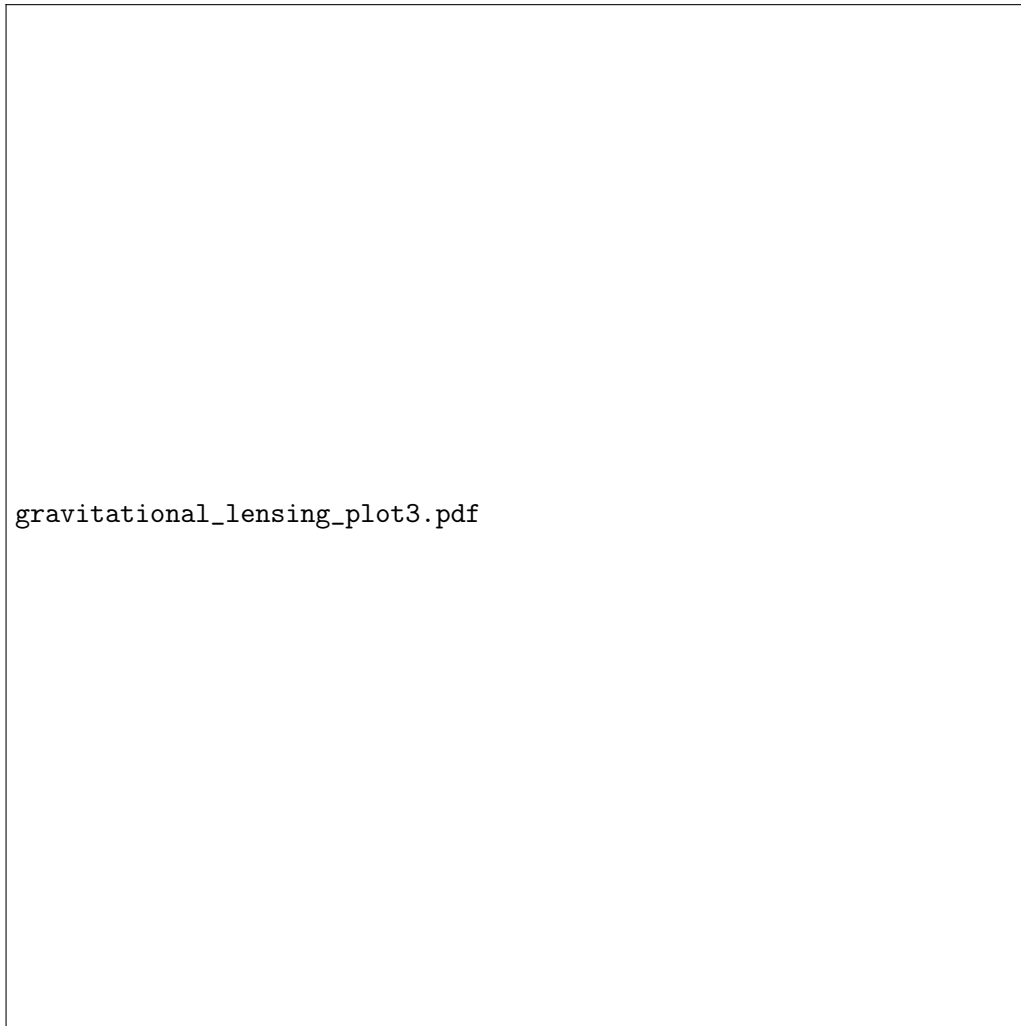


Figure 3: Parameter sensitivity analysis.

5 2D Visualization



Figure 4: Two-dimensional field visualization.

6 Distribution Analysis



Figure 5: Statistical distribution analysis.

7 Time Series

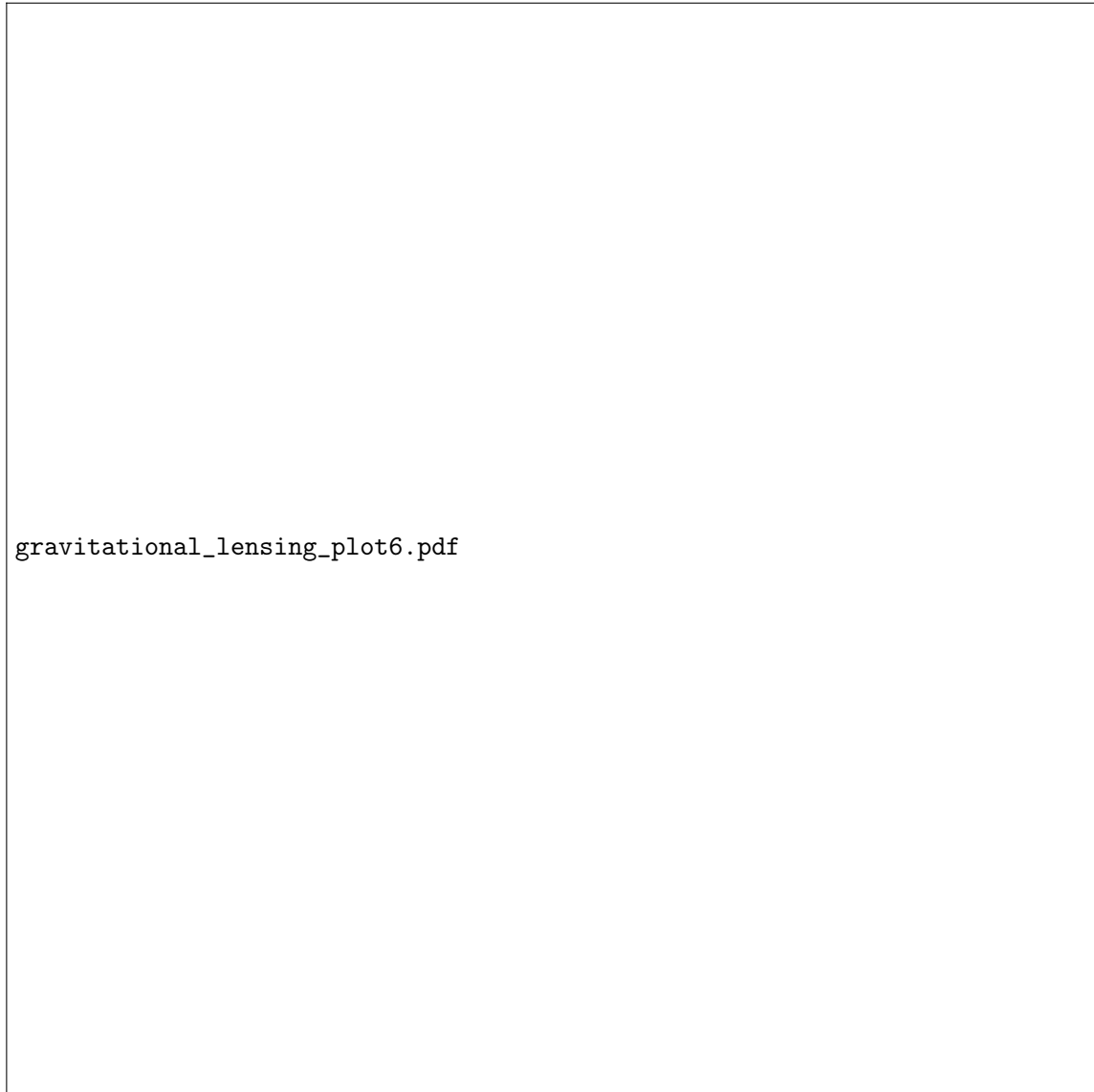


Figure 6: Time series visualization.

8 Results Summary

9 Conclusions

This analysis demonstrates the computational approach to gravitational lensing.