

Continuum Reverberation Mapping of an Active Galactic Nucleus

Diego Researcher Collaborator One

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Abstract

We present a demonstration manuscript generated by ScientificTeX. This example contains a realistic abstract, sections, a table, an equation, citations, and a figure placeholder so that the compiled PDF is visibly formatted from the first build.

1 Introduction

Active galactic nuclei (AGN) are powered by gas accretion onto supermassive black holes. Variability provides a powerful way to probe spatial scales that cannot be resolved directly [??].

2 Observations

Our example campaign combines ultraviolet and optical monitoring. Table 1 summarizes three illustrative bands.

Table 1: Example observing bands.

Band	Wavelength (Å)	Lag (d)
UVW2	1928	0.00
<i>g</i>	4770	1.20
<i>i</i>	7545	2.10

3 Model

For a standard thin accretion disc, the characteristic continuum delay scales approximately as

$$\tau(\lambda) \propto \lambda^{4/3}. \quad (1)$$

4 Results

The example data show increasing delay with wavelength, as expected for an outwardly cooler disc.

5 Discussion

ScientificTeX is intended to keep the scientific content editable while allowing journal-specific formatting to be applied through templates.

6 Conclusions

This example confirms that the editor, bibliography, equations, tables, and PDF compilation are working.