

The Time-Symmetric Parity Constraint

Preface

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This library brings together a series of papers exploring whether the large-scale structure of the Universe may admit a simpler description than that provided by contemporary cosmology. Readers unfamiliar with the Time-Symmetric Parity Constraint (TSPC) may find it helpful to begin with the *Pocket Guide*, which provides a concise introduction to the framework developed in the papers that follow.

Each paper has been written as a self-contained study addressing a particular theoretical or observational question. Together, however, they form a coherent programme of investigation. The collection begins with papers establishing the conceptual and mathematical foundations of the Time-Symmetric Parity Constraint, before examining its implications for inflation, dark matter, dark energy, cosmological tensions, and a range of observational tests. The concluding papers consider the broader methodological questions raised by this approach and its relationship to competing cosmological frameworks.

The papers have been organised into thematic groups for convenience rather than dependence. Although they develop a continuous line of reasoning, they are intended to be read individually as well as collectively. Consequently, some repetition of notation, background material, and summary is unavoidable.

Readers following the collection from beginning to end may therefore regard each paper as an independent investigation contributing to a wider research programme rather than as chapters of a single book.

The work proceeds from a simple methodological principle. Rather than extending an existing cosmological model through additional entities, parameters, or epochs, it asks whether a more restrictive geometric framework can account for the same observations with fewer assumptions. The Time-Symmetric Parity Constraint is proposed as one such restriction. Its value lies not in explanatory flexibility but in the extent to which it limits the range of admissible cosmological behaviour and therefore exposes itself to observational refutation.

The empirical papers place particular emphasis on direct observational tests of the relationship between redshift, geometry, and cosmic time. Within this programme, falsifiability is understood to include not only spatial or dynamical disagreement with observation, but also temporal inadmissibility. Forecast-driven optimisation and additional parametric freedom have therefore been deliberately excluded from the interpretive strategy adopted throughout the series.

Like any continuing programme of research, the collection reflects an evolving understanding of its subject.

Individual papers supersede or refine earlier discussions as new arguments, observations, and analyses have emerged. They are presented in the order that best reflects the logical development of the framework rather than the chronology of their preparation.

The author is a chartered architect in private practice whose professional work has centred on the analysis of complex structures and the disciplined interpretation of technical evidence. These papers originated as an exploration of whether contemporary artificial intelligence could serve as a rigorous analytical partner in theoretical research. AI has been used throughout as a tool for drafting, checking consistency, exploring alternative formulations, and identifying weaknesses in argument. Responsibility for the reasoning, conclusions, and any remaining errors rests entirely with the author.

Grateful acknowledgement is made to four individuals whose generosity of time and

thought has assisted the development of this work. Professor George F. R. Ellis offered early correspondence and critique that clarified the role of the Parity Field as a fixed, non-dynamical tensor and helped to refine the algebraic form of the constraint. Professor Paul Tod provided detailed guidance and constructive challenge on the mathematical formulation, particularly regarding freedom conditions and invariance. Professor Andrew Steane advised on eliminating unnecessary and subjective concepts, encouraging tighter prose and a clearer logical progression of the algebraic arguments. Professor Andrew Briggs gave initial encouragement and facilitated contact with colleagues, introducing the work to Professor Ellis with characteristic generosity.

Their contributions, made in good faith and without implication of endorsement, are recorded with sincere appreciation.

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