

Contents

Part I Minkowski's Representation of Special Relativity – Examples of Its Impact on the Twentieth Century Physics

The Minkowskian Background of Whitehead's Theory of Gravitation	3
Ronny Desmet	

The Experimental Verdict on Spacetime from Gravity Probe B	25
James Overduin	

Rigidity and the Ruler Hypothesis	61
Stephen N. Lyle	

Minkowski Space and Quantum Mechanics	107
Paul O'Hara	

Relativity and Quantum Field Theory	129
Jonathan Bain	

Ether, the Theory of Relativity and Quantum Physics	147
Eduardo V. Flores	

Part II Implications of Minkowski's Ideas for the Philosophy of Space and Time

Minkowski's Proper Time and the Status of the Clock Hypothesis	159
Richard T.W. Arthur	

Why Spacetime Is Not a Hidden Cause: A Realist Story	181
Graham Nerlich	

Structural Explanations in Minkowski Spacetime: Which Account of Models?	193
Mauro Dorato and Laura Felline	
Relativity of Simultaneity and Eternalism: In Defense of the Block Universe	209
Daniel Peterson and Michael Silberstein	
Minkowski Space-Time and Thermodynamics	239
Friedel Weinert	
No Presentism in Quantum Gravity	257
Christian Wüthrich	
Part III The Impact of Minkowski's Ideas Beyond the Philosophy of Space and Time	
Space-Time, Phenomenology, and the Picture Theory of Language	281
Hans Herlof Grelland	
The Fate of Mathematical Place: Objectivity and the Theory of Lived-Space from Husserl to Casey	291
Edward Slowik	
Index	313