

CONTENTS

CONTRIBUTORS	vii
PREFACE	ix
FORTHCOMING CONTRIBUTIONS	xi

Second-Generation Image Coding

N. D. BLACK, R. J. MILLAR, M. KUNT, M. REID, and F. ZILIANI

I. Introduction	1
II. Introduction to the Human Visual System	4
III. Transform-Based Coding	8
IV. Segmentation-Based Approaches	31
V. Summary and Conclusions	46
References	50

The Aharonov-Bohm Effect—A Second Opinion

WALTER C. HENNEBERGER

I. Introduction	56
II. The Vector Potential	63
III. Dynamics of the Aharonov-Bohm Effect	66
IV. Momentum Conservation in the Aharonov-Bohm Effect	69
V. Stability of the AB Effect	70
VI. The AB Effect Can Not Be Shielded	71
VII. Interaction of a Passing Classical Electron with a Rotating Quantum Cylinder	74
VIII. Solution of the Entire Problem of the Closed System	81
IX. The Interior of the Solenoid	86
X. Ambiguity in Quantum Theory, Canonical Transformations, and a Program for Future Work	90
References	93

Well-Composed Sets

LONGIN JAN LATECKI

I. Introduction	95
II. Definition and Basic Properties of Well-Composed Sets	98
III. 3D Well-Composed Sets	103
IV. 2D Well-Composed Sets	113

V. Digitization and Well-Composed Images	142
VI. Application: An Optimal Threshold	154
VII. Generalizations	159
References	161

Non-Stationary Thermal Field Emission

V. E. PTITSIN

I. Introduction	165
II. Electron Emission and Thermal Field Processes Activated by High Electric Fields Acting on Metal Surfaces	167
III. Phenomenological Model of Non-Stationary Thermal Field Emission	191
IV. Discussion and Conclusion	221
Acknowledgments	225
References	225
Appendix	228

Theory of Ranked-Order Filters with Applications to Feature Extraction and Interpretive Transforms

BART WILBURN

I. Introduction	233
II. Statistical Approach to Ranked-Order Filters	235
III. Mathematical Logic Approach to Ranked-Order Filters	241
IV. A Language Model Based on Ranked-Order Filters	307
V. Conclusions	331
References	332
Index	333