

# Contents

<b>1 Innovative Imaging, Parsing Patterns and Motivating Models .....</b>	<b>1</b>
1.1 Image Introductory .....	2
1.2 Satellite Sensing Scenario .....	9
1.3 Innovative Imaging of Ecological and Environmental Indicators .....	11
1.4 Georeferencing and Formatting Image Data .....	16
1.5 The 4CS Pattern Perspective On Image Modeling .....	18
References .....	21
<b>2 Pattern Progressions and Segmentation Sequences for IMAGE</b>	
<b>Intensity Modeling and Grouped Enhancement .....</b>	<b>23</b>
2.1 Pattern Process, Progression, Prominence and Potentials .....	23
2.2 Polypatterns .....	25
2.3 Pattern Pictures, Ordered Overtones and Mosaic Models of Images .....	26
2.4 Pattern Processes for Image Compression by Mosaic Modeling .....	29
2.5 $\alpha$ -Scenario Starting Stages .....	31
2.6 $\alpha$ -Scenario Splitting Stage .....	32
2.7 $\alpha$ -Scenario Shifting Stage .....	33
2.8 $\beta$ -Scenario Starting Stages .....	36
2.9 $\beta$ -Scenario Splitting Stage .....	37
2.10 Tree Topology and Level Loss .....	39
2.11 $\gamma$ -Scenario for Parallel Processing .....	40
2.12 Regional Restoration .....	42
2.13 Relative Residuals .....	42
2.14 Pictorial Presentation and Grouped Versus Global Enhancement .....	47
2.15 Practicalities of Pattern Packages .....	47
References .....	48
<b>3 Collective and Composite Contrast for Pattern Pictures .....</b>	<b>51</b>
3.1 Indirect Imaging by Tabular Transfer .....	51
3.2 Characteristics of Colors .....	53
3.3 Collective Contrast .....	54
3.4 Integrative Image Indicators .....	55
3.5 Composite Contrast for Pattern Pictures .....	60
3.6 Tailored Transfer Tables .....	61
References .....	62

<b>4 Content Classification and Thematic Transforms .....</b>	<b>63</b>
4.1 Interpretive Identification .....	64
4.2 Thematic Transforms .....	67
4.3 Algorithmic Assignments .....	69
4.4 Adaptive Assignment Advisor .....	70
4.5 Mixed Mapping Methods .....	75
References .....	78
<b>5 Comparative Change and Pattern Perturbation .....</b>	<b>79</b>
5.1 Method of Multiple Mappings .....	80
5.2 Compositing Companion Images .....	81
5.3 Direct Difference Detection .....	82
5.4 Pattern Perturbation .....	87
5.5 Integrating Indicators .....	90
5.6 Spanning Three or More Dates .....	92
References .....	95
<b>6 Conjunctive Context .....</b>	<b>99</b>
6.1 Direct Detrending .....	99
6.2 Echelons of Explicit Spatial Structure .....	103
6.3 Disposition and Situation .....	106
6.4 Joint Disposition .....	106
6.5 Edge Affinities .....	109
6.6 Patch Patterns and Generations of Generalization .....	114
6.7 Parquet Polypattern Profiles .....	115
6.8 Conformant/Comparative Contexts and Segment Signal Sequences .....	117
6.9 Principal Properties of Patterns .....	125
References .....	128
<b>7 Advanced Aspects and Anticipated Applications .....</b>	<b>129</b>
7.1 Advantageous Alternative Approaches .....	129
7.2 Structural Sectors of Signal Step Surfaces .....	131
7.3 Thematic Tracking .....	133
7.4 Compositional Components .....	134
7.5 Scale and Scope .....	136
References .....	136
<b>Appendix A. Public Packages for Portraying Polypatterns .....</b>	<b>139</b>
A.1 MultiSpec for Multiband Images and Ordered Overtones .....	139
A.2 ArcExplorer .....	147
<b>Appendix B. <math>\alpha</math>-Scenario with PSIMAPP Software .....</b>	<b>149</b>
B.1 Polypatterns from Pixels .....	151
B.2 Supplementary Statistics .....	153
B.3 Collective Contrast .....	153
B.4 Tonal Transfer Tables .....	156

---

B.5 Combinatorial Contrast .....	159
B.6 Regional Restoration .....	160
B.7 Relative Residuals .....	161
B.8 Direct Differences .....	163
B.9. Detecting Changes from Perturbed Patterns .....	165
B.10 Edge Expression .....	167
B.11 Covariance Characteristics .....	168
<b>Appendix C. Details of Directives for PSI MAPP Modules .....</b>	<b>171</b>
<b>Glossary.....</b>	<b>175</b>
<b>Index .....</b>	<b>177</b>