

Contents

Preface	v
1 Fine Structure	1
1.1 Acceptable J -Structures	1
1.2 The Σ_1 -Projectum	6
1.3 Downward Extension of Embeddings Lemmata	8
1.4 Upward Extension of Embeddings Lemma	12
1.5 Iterated Projecta	18
1.6 Σ^* -Relations	20
1.7 $\Sigma_\ell^{(n)}$ -Embeddings	23
1.8 Substitution and Good Functions	26
1.9 Standard Parameters	33
1.10 Two Applications to L	36
1.11 More on Downward Extensions of Embeddings	38
1.12 Witnesses and Solidity	41
Notes	45
2 Extenders and Coherent Structures	47
2.1 Extenders	47
2.2 The Hypermeasure Representation of Extenders	54
2.3 Amenability	56
2.4 Coherent Structures	58
2.5 Extendibility	61
2.6 Strong Cardinals	68
Notes	70
3 Fine Ultrapowers	71
3.1 The $*$ -Ultrapower Construction	71
3.2 Some Special Preservation Properties	82
3.3 When F Is Close to M	85
3.4 Extendibility	89
3.5 k -Ultrapowers	93
3.6 Pseudoultrapowers	96
Notes	108
4 Mice and Iterability	109
4.1 Premice	109
4.2 Iterations	114
4.3 Copying and the Dodd–Jensen Lemma	119

4.4	Comparison Process	127
4.5	Some Iterability Criteria	131
4.6	Bicephali	142
	Notes	145
5	Solidity and Condensation	146
5.1	Cores and Coiterations	146
5.2	The Solidity Theorem	150
5.3	Consequences of Solidity	155
5.4	The Canonical Ordering of Mice	160
5.5	Condensation Lemma	163
5.6	Upwards Extensions to Premice	167
	Notes	174
6	Extender Models	175
6.1	Extender Models and Iterations	175
6.2	The Canonical Ordering of Weasels	178
6.3	Universality	183
6.4	The Model K^c	186
6.5	\mathcal{O}^\sharp	198
6.6	Weak Covering	203
	Notes	211
7	The Core Model	212
7.1	Inductive Definition of K	212
7.2	Steel's Definition of K	214
7.3	The Existence of K	218
7.4	Embeddings of K and Generic Absoluteness	230
7.5	Weak Covering for K	235
	Notes	249
8	One Strong Cardinal	251
8.1	Premice	251
8.2	Properties of Mice	258
8.3	Extender Models up to One Strong Cardinal	269
	Notes	279
9	Overlapping Extenders	280
9.1	Premice and Iteration Trees	281
9.2	Copying and the Dodd–Jensen Property	299
9.3	Solidity and Condensation	318
9.4	Uniqueness of Well-Founded Branches	345
9.5	Towards the Ultimate Model K^c	355
	Notes	358

Bibliography	359
--------------	-----

Index	365
-------	-----