

Contents

<i>List of contributors</i>	<i>page</i> ix
<i>Preface</i>	xiii
1 Left Relatively Convex Subgroups	1
<i>Antolin, Dicks, and Šunić</i>	
1.1 Outline	2
1.2 Left Relatively Convex Subgroups	3
1.3 Graphs of Groups	8
1.4 Surface Groups and RAAGs	12
1.5 Residually Torsion-free Nilpotent Groups and Left Relative Convexity	14
2 Groups with Context-free Co-word Problem and Embeddings into Thompson’s Group V	19
<i>Berns-Zieve, Fry, Gillings, Hoganson, and Mathews</i>	
2.1 Introduction	20
2.2 Background	21
2.3 Demonstrative Groups	29
2.4 Main Result	31
3 Limit Sets for Modules over Groups Acting on a $CAT(0)$ Space	38
<i>Bieri and Geoghegan</i>	
3.1 Horospherical Limit Sets of G -modules	38
3.2 Two General Results on the G -pairs (M, A)	39
3.3 A Unifying Concept	40
3.4 G -dynamical Limit Points and G -finitary Homo- morphisms	41
3.5 ${}^\circ\Sigma(M; A)$ as an Object of Interest in its Own Right	43

4	Ideal Structure of the C^*-algebra of R. Thompson's group T	46
	<i>Bleak and Juschenko</i>	
4.1	Introduction	47
4.2	Powers' Test	52
4.3	A Ping-Pong Lemma for Orientation Preserving Homeomorphisms of S^1	56
4.4	Applying Condition 4.5, and Variants, in T	60
4.5	Non-amenability of F and a Condition on Ideals of its C^* -algebra.	63
4.6	Some Questions	64
5	Local Similarity Groups with Context-free Co-word Problem	67
	<i>Farley</i>	
5.1	Introduction	67
5.2	Background	71
5.3	Test Partitions	76
5.4	A Language for Sim_X	79
5.5	Witness Automata	87
5.6	Proof of the Main Theorem	90
6	Compacta with Shapes of Finite Complexes: a Direct Approach to the Edwards–Geoghegan–Wall Obstruction	92
	<i>Guilbault</i>	
6.1	Introduction	92
6.2	Background	94
6.3	Main Results	99
6.4	Realizing the Obstructions	109
7	The Horofunction Boundary of the Lamplighter Group L_2 with the Diestel–Leader metric	111
	<i>Jones and Kelsey</i>	
7.1	Introduction	111
7.2	The Diestel–Leader Metric on L_2	114
7.3	Busemann Points	117
7.4	Model Horofunctions	119
7.5	Classification of Horofunctions	123
7.6	Topology of the Horofunction Boundary	129
7.7	Action of L_2 on the Horofunction Boundary	131

<i>Contents</i>		vii
8	Intrinsic Geometry of a Euclidean Simplex	135
	<i>Minemyer</i>	
	8.1 Introduction	135
	8.2 The Main Formula	136
	8.3 The Minimal Allowable Edge Length when all Other Edges have Length 1	138
	8.4 Volume of an n -simplex via Edge Lengths	140
	8.5 Distance from the Barycenter to the Boundary of an Equilateral Simplex	142
	8.6 Cayley–Menger Determinants and Gromov’s \mathcal{K} - curvature Question	143
9	Hyperbolic Dimension and Decomposition Complexity	146
	<i>Nicas and Rosenthal</i>	
	9.1 Decomposition Complexity	148
	9.2 Equivalent Definitions of Decomposability	155
	9.3 Weak Hyperbolic Dimension	162
	9.4 Some Open Questions	165
10	Some Remarks on the Covering Groups of a Topological Group	168
	<i>Qi</i>	
	10.1 Covering Spaces	168
	10.2 Covering Groups of a Topological Group	170
11	The Σ-invariants of Thompson’s group F via Morse Theory	173
	<i>Witzel and Zaremsky</i>	
	11.1 Introduction	173
	11.2 The Invariants	174
	11.3 Thompson’s Group and the Stein–Farley Complex	179
	11.4 Links and Subcomplexes	184
	11.5 The Long Interval	186
	11.6 The Characters χ_0 and χ_1	188
	11.7 The Short Interval	189