

Index

- antitree 100, 165
- boundary
 - of a metric subgraph 151
 - of a subgraph 156
- boundary condition
 - δ -coupling 24
 - Kirchhoff (or standard) 25
 - Rofe–Beketov 200
- boundary triplet 201
 - direct sum 204
- $CA(\mathcal{G} \setminus \mathcal{V})$ 56
- cable system 97
 - canonical 114
 - minimal 97
- combinatorial
 - distance 100, 108
 - Laplacian 100
 - sphere 100
- cycle 15
 - disjoint cycle cover 104
- deficiency index
 - of a symmetric linear relation 201
 - of a symmetric operator 201
- degree
 - combinatorial 15
 - weighted 21
- δ -coupling 24
- Dirichlet form 207
 - extended 210
 - in the wide sense 207
 - irreducible 208
 - recurrent 208
 - regular 208
 - stochastically complete 209
 - strongly local 207
 - transient 208
- edge
 - multiple 15
 - weight 19
 - on metric graph 19, 30
- end
 - (Freudenthal) compactification 19
 - finite volume 143
 - free 19
 - infinite volume 143
 - non-free 19
 - of a graph 18
 - of a group 175
 - topological 18
- extended Dirichlet space 210
- extension
 - Markovian 53
 - proper 201
- finite energy extension 149
- function
 - harmonic on a graph 118
 - harmonic on a metric graph 120
 - of finite energy 20
 - sub-/superharmonic on a graph 118
 - sub-/superharmonic on a weighted metric graph 120
- geodesic 116
 - metric space 116
- graph 15
 - Cayley 174
 - connected 15, 20
 - locally finite 15
 - locally finite weighted 21
 - metric 16
 - multi 15
 - of bounded geometry 15
 - oriented 15
 - plane 189
 - simple 15
 - tessellating 189
 - undirected 15
 - weighted 19
- $\iota_{\mathcal{V}}$ 57
- intrinsic

- edge length 33
- essential size (of a metric graph) 48
- metric 109, 106
- size (of a metric graph) 48
- size (of a model) 48
- weight 109
- weight for a graph 109
- weight for a weighted metric graph 106
- isoperimetric constant
 - for metric graph 152
 - for weighted graph 156
- Jacobi matrix 89
 - on a graph 98, 125
- killing term 19
- Kirchhoff
 - boundary condition 25
 - Laplacian 26
- Krein resolvent formula 202
- Laplacian
 - combinatorial 100
 - graph 20
 - Dirichlet 20
 - maximal 21
 - minimal 21
 - Neumann 20
 - pre-minimal 21
 - Kirchhoff 24
 - Dirichlet 28
 - Gaffney 28
 - maximal 26
 - minimal 26
 - Neumann 27
 - pre-minimal 26
 - normalized 99
 - with δ -couplings 26
- length metric 16
- linear relation 199
 - adjoint 199
 - closed 199
 - domain 199
 - kernel 199
 - multivalued part 199
 - operator part 199
- range 199
- resolvent 200
- resolvent set 200
- self-adjoint 199
- spectrum 200
- symmetric 199
- loop 15
- Markovian
 - condition 207
 - semigroup 207
- metric
 - intrinsic
 - for a graph 109
 - for a metric graph 106
 - of finite jump size 113
 - path 108
- metric graph 16
 - model 16
 - refinement 17, 30
 - simple 17
 - weighted 30
 - finite size 48
 - infinite size 48
 - model 30
- model (see *metric graph*)
- normal contraction 207
- path
 - in a graph 15
 - in a metric graph 17
- path metric 108
 - natural 108
 - star 109
 - strongly intrinsic 109
- perturbation
 - form bounded 141
 - strongly form bounded 141
- quasi-isometry 112
- ray 18
 - equivalent 18
- refinement 17, 30

Schrödinger operator on a graph 21

semigroup

– heat 207

– L^∞ -contractive 207

– Markovian 207

– positivity preserving 207

– recurrent 208

– transient 208

– ultracontractive 211

tessellation 189

theorem

– Gaffney for metric graphs 133

– Gaffney for weighted graphs 134

– Glazman–Povzner–Wienholtz 136, 137

– Hopf–Rinow 116

tree 126

– rooted 126

Vertex 15

– inessential 30

– initial 15

– terminal 15

Weyl function 202