

Index

- T – Q relations, 163
- XY model, 12
- δ -interacting bosons
 - one component, *see* Lieb–Liniger
- δ -interacting fermions, 223
 - Bethe equations, 230
 - ground state, 240, 242
 - capacitor analogy, 243
 - relation to inhomogeneous six-vertex model, 225
 - thermodynamics, 236
- δ -interacting particles, 203, 253
 - Bethe Ansatz, 204, 257
 - Yang’s representation, 207
 - Bethe equations, 263
 - commuting transfer matrices, 212
 - scattering matrix, 207
 - transfer matrix, 253, 255
- Baxter
 - tour-de-force, 194
- Calogero–Sutherland model, 292
- discrete gas model, 283
- eight-vertex model, 142
 - a, b, c, η, ξ , 125
 - as a six-vertex model, 185
 - as a system of dimers, 144
 - as an Ising model, 143, 179
 - Bethe Ansatz, 188, 193
 - Bethe equations, 194
 - commuting transfer matrices, 153
 - critical exponents, 199
 - elliptic uniformization, 155, 167
 - free energy
 - singularities, 197
 - ground state, 196
 - inhomogeneous, 159
 - partition function, 142
 - Kasteleyn’s Pfaffian method, 145
 - self-conjugate, 115, 281
 - self-dual, 146
 - thermodynamics, 194
 - trace identity, 152, 162
- elliptic functions, 175
 - Frobenius formula, 298
- Jacobi relations, 177
 - extended, 294
- Jacobi transformation, 162, 178
- Landen transformation, 157, 162, 178
- F model, 133, 142, 197
- Gaudin algebra, 270
- Gaudin models, 268
 - anisotropic, 275
 - for a general Lie algebra, 277
- hard hexagon model, 286
- Heisenberg model
 - $T = \pm 0$ limits, 46
- XXX isotropic
 - definition, 2
 - total spin quantum number, 10
- XXZ anisotropic
 - definition, 2
 - Ising limit, 14, 23, 44
 - Orbach parametrization, 8
- XYZ anisotropic
 - definition, 2
 - equivalent bosonic model, 98
 - ground state, 196
 - relation to eight-vertex model, 151
 - trace identity, 162
- Bethe Ansatz, 6
- Bethe equations, 9
- Des Cloizeaux–Pearson dispersion relation, 28

324

elementary excitations, 30
 energy, 6
 equivalent bosonic model, 95
 free energy, 41
 generalized, 263
 ground state quantum numbers, 13
 large T behaviour, 52
 link to Lieb–Liniger, 94
 link to six-vertex model, 124
 open, 89
 small T behaviour, 51
 state counting, 24
 state normalization, 66
 strings, 15, 18
 as bound states, 22
 TBA equations, 38
 Yang–Yang thermodynamics, 33
 Hubbard model, 220
 Bethe Ansatz, 221

 ice model, 112, 142, 185
 vertices, 113
 ice rule, 112, 142, 150
 Ising model, 14

 Jordan–Wigner transformation, 12

 kaleidoscope, generalized, 83
 KDP model, 134, 142
 Kondo model, 108

 Lai model, 220, 222
 Lax pair, 216
 Lieb–Liniger, 54
 $c = 0^+$ limit, 65
 Bethe Ansatz, 55
 Bethe equations, 63
 closure relation, 57
 ground state, 67
 capacitor analogy, 68
 link to Heisenberg chain, 94
 on finite interval, 79

Index

Bethe equations, 81
 boundary energy, 82
 small c expansion, 69
 state normalization, 56, 61, 65
 state orthogonality, 75
 Yang–Yang thermodynamics, 70
 Love equation, 68, 243
 Luttinger model, 99, 100, 102

 Richardson model, 275

 semi-simple groups, wavefunctions associated with,
 85
 six-vertex model, 112, 142
 Bethe Ansatz, 121
 Bethe equations, 124
 cyclicity condition, 120
 free energy, 124
 singularities, 133, 134
 inhomogeneous, 185
 link to Heisenberg model, 124
 Orbach parametrization, 125
 transfer matrix, 114
 vertices, 113
 sixteen-vertex model, 143
 star–triangle relation, *see* Yang–Baxter relation

 ternary relation, *see* Yang–Baxter relation
 Thirring model
 Bethe Ansatz, 109
 Bethe equations, 110
 bound states, 110
 massive, 105
 massless, 105
 pathology, 108
 Toda chain, 292, 301
 Bäcklund transformation, 301
 integrability, 304
 solitons, 303, 307

 Yang–Baxter relation, 154, 214