

---

# CONTENTS

Preface . . . . .	v
<b>PIONEERING WORKS . . . . .</b>	<b>5</b>
C. N. Yang, "Some Exact Results for the Many-Body Problem in One Dimension with Repulsive Delta-Function Interaction", <i>Phys. Rev. Lett.</i> <b>19</b> (1967) 1312-1314 . . . . .	7
C. N. Yang, "S Matrix for the One-Dimensional $N$ -Body Problem with Repulsive or Attractive $\delta$ -Function Interaction", <i>Phys. Rev.</i> <b>168</b> (1968) 1920-1923 . . . . .	10
R. J. Baxter, "Partition Function of the Eight-Vertex Lattice Model", <i>Ann. Phys.</i> <b>70</b> (1972) 193-228 . . . . .	14
R. J. Baxter, "Solvable Eight-Vertex Model on an Arbitrary Planar Lattice", <i>Phil. Trans. Royal Soc. London</i> <b>289</b> (1978) 315-346 . . . . .	50
A. B. Zamolodchikov and Al. B. Zamolodchikov, "Factorized $S$ -Matrices in Two Dimensions as the Exact Solutions of Certain Relativistic Quantum Field Theory Models", <i>Ann. Phys.</i> <b>120</b> (1979) 253-291 . . . . .	82
E. K. Sklyanin, "Quantum Version of the Method of Inverse Scattering Problem", <i>J. Soviet Math.</i> <b>19</b> (1982) 1546-1596. [ <i>Zapiski Nauch. Sem. LOMI</i> <b>95</b> (1980), 55-128] . . . . .	121
P. P. Kulish and E. K. Sklyanin, "Solutions of the Yang-Baxter Equation", <i>J. Soviet Math.</i> <b>19</b> (1982) 1596-1620. [ <i>Zapiski Nauch. Sem. LOMI</i> <b>95</b> (1980), 129-160] . . . . .	172
<b>CLASSICAL YANG-BAXTER EQUATION . . . . .</b>	<b>199</b>
A. A. Belavin and V. G. Drinfel'd, "Solutions of the Classical Yang-Baxter Equation for Simple Lie Algebras", <i>Funct. Anal. Appl.</i> <b>16</b> (1983) 159-180 . . . . .	200
V. G. Drinfel'd, "Hamiltonian Structures on Lie Groups, Lie Bialgebras and the Geometric Meaning of the Classical Yang-Baxter Equations", <i>Soviet Math. Doklady</i> <b>27</b> (1983) 68-71 . . . . .	222
M. A. Semenov-Tyan-Shanskii, "What is a Classical $r$ -matrix?", <i>Funct. Anal. Appl.</i> <b>17</b> (1984) 259-272 . . . . .	226

<b>QUANTUM GROUPS</b> . . . . .	243
E. K. Sklyanin, "Some Algebraic Structures Connected with the Yang-Baxter Equation", <i>Funct. Anal. Appl.</i> <b>16</b> (1983) 263–270; <b>17</b> (1984) 273–284 . . . . .	244
V. G. Drinfel'd, "Hopf Algebras and the Quantum Yang-Baxter Equation", <i>Soviet Math. Doklady</i> <b>32</b> (1985) 254–258 . . . . .	264
V. G. Drinfel'd, "Quantum Groups", <i>Proceedings of the     International Congress of Mathematicians, Berkeley 1987</i> , 798–820 . . . . .	269
M. Jimbo, "A $q$ -Difference Analogue of $U(\mathfrak{g})$ and the Yang-Baxter Equation", <i>Lett. Math. Phys.</i> <b>10</b> (1985) 63–69 . . . . .	292
L. D. Faddeev, N. Yu. Reshetikhin and L. A. Takhtajan, "Quantization of Lie Groups and Lie Algebras", in <i>Algebraic Analysis</i> , eds. M. Kashiwara and T. Kawai, Academic, Boston 1989, 129–139 . . . . .	299
<b>VARIETY OF SOLUTIONS I — QUANTIZATION</b> . . . . .	313
A. A. Belavin, "Dynamical Symmetry of Integrable Quantum Systems", <i>Nucl. Phys.</i> <b>B180</b> [FS2] (1981) 189–200 . . . . .	314
J. H. H. Perk and C. L. Schultz, "Families of Commuting Transfer Matrices in $q$ -State Vertex Models", in <i>Non-linear Integrable Systems — Classical Theory and     Quantum Theory</i> , eds. M. Jimbo and T. Miwa, World Scientific, Singapore 1983, 135–152 . . . . .	326
V. V. Bazhanov, "Integrable Quantum Systems and Classical Lie Algebras", <i>Comm. Math. Phys.</i> <b>113</b> (1987) 471–503 . . . . .	344
M. Jimbo, "Quantum $R$ -Matrix for the Generalized Toda System", <i>Comm. Math. Phys.</i> <b>102</b> (1986) 537–547 . . . . .	377
<b>VARIETY OF SOLUTIONS II — IRF MODELS AND OTHERS</b> . . . . .	391
R. J. Baxter, "Eight-Vertex Model in Lattice Statistics and One-Dimensional Anisotropic Heisenberg Chain I, II, III", <i>Ann. Phys.</i> <b>76</b> (1973) 1–24, 25–47, 48–71 . . . . .	392

M. Jimbo, T. Miwa and M. Okado, "Solvable Lattice Models Related to the Vector Representation of Classical Simple Lie Algebras", <i>Comm. Math. Phys.</i> <b>116</b> (1988) 507-525 . . . . .	463
V. Pasquier, "Etiology of IRF Models", <i>Comm. Math. Phys.</i> <b>118</b> (1988) 335-364 . . . . .	482
V. A. Fateev and A. B. Zamolodchikov, "Self-Dual Solutions of the Star-Triangle Relations in $Z_N$ Models", <i>Phys. Lett.</i> <b>A92</b> (1982) 37-39 . . . . .	492
<b>MISCELLANEOUS TOPICS</b> . . . . .	497
P. P. Kulish, N. Yu. Reshetikhin and E. K. Sklyanin, "Yang-Baxter Equation and Representation Theory I", <i>Lett. Math. Phys.</i> <b>5</b> (1981) 393-403 . . . . .	498
E. Date, M. Jimbo, A. Kuniba, T. Miwa and M. Okado, "Exactly Solvable SOS Models. II: Proof of the Star-Triangle Relation and Combinatorial Identities", <i>Adv. Stud. Pure Math.</i> <b>16</b> (1988) 17-122. (pp. 17-48 to be included here) . . . . .	509
I. V. Cherednik, "On 'Quantum' Deformations of Irreducible Finite-Dimensional Representations of $gl_N$ ", <i>Soviet Math. Doklady</i> <b>33</b> (1986) 507-510 . . . . .	615
N. Yu. Reshetikhin and P. Wiegmann, "Towards the Classification of Completely Integrable Quantum Field Theories (the Bethe-Ansatz Associated with Dynkin Diagrams and Their Automorphisms)", <i>Phys. Lett</i> <b>B189</b> (1987) 125-131 . . . . .	619
<b>GENERALIZATIONS</b> . . . . .	629
A. B. Zamolodchikov, "Tetrahedron Equations and the Relativistic $S$ -Matrix of Straight Strings in $2 + 1$ Dimensions", <i>Comm. Math. Phys.</i> <b>79</b> (1981) 489-505 . . . . .	630
R. J. Baxter, "On Zamolodchikov's Solution of the Tetrahedron Equations", <i>Comm. Math. Phys.</i> <b>88</b> (1983) 185-205 . . . . .	647
R. J. Baxter, J. H. H. Perk and H. Au-Yang, "New Solutions of the Star-Triangle Relations for the Chiral Potts Model", <i>Phys. Lett.</i> <b>A128</b> (1988) 138-142 . . . . .	668

V. V. Bazhanov and Yu. G. Stroganov, "Chiral Potts Model as a Descendant of the Six-Vertex Model", preprint 1989 . . . . .	673
<b>LIST OF REFERENCES</b> . . . . .	699