

## References

- [1] P. Ramond, "Field theory, a modern primer", 2nd edition, Addison-Wesley, Redwood City, CA (1989).
- [2] A. Ashtekar (Notes prepared in collaboration with R. Tate), "Lectures on non-perturbative canonical gravity", Advanced Series in Astrophysics and Cosmology Vol. 6, World Scientific, Singapore (1991).
- [3] A. Ashtekar, "Mathematical problems of non-perturbative quantum gravity", to appear in Proceedings of the 1992 Les Houches Summer School on gravitation and quantization, editor B. Julia, North-Holland, Amsterdam (1995).
- [4] J. Lewandowski, *Class. Quan. Grav.* **10**, 879 (1993).
- [5] R. Gambini, A. Trias, *Phys. Rev.* **D23**, 553 (1981).
- [6] J. Barrett, *Int. J. Theor. Phys.* **30**, 1171 (1991).
- [7] K. Chen, *Ann. Math.* **97**, 217 (1973).
- [8] S. Mandelstam, *Ann. Phys. (NY)* **19**, 1 (1962).
- [9] S. Mandelstam, *Phys. Rev.* **175**, 1580 (1968).
- [10] A. Migdal, *Ann. Phys. (NY)* **126**, 279 (1980).
- [11] A. Migdal, *Phys. Rep.* **102**, 199 (1983).
- [12] Yu. M. Makeenko, A. A. Migdal, *Phys. Lett.* **B88**, 135 (1979); *Nucl. Phys.* **B188**, 269 (1981).
- [13] R. Gambini, A. Trias, *Phys. Rev.* **D27**, 2935 (1983).
- [14] X. Fustero, R. Gambini, A. Trias, *Phys. Rev.* **D31**, 3144 (1985).
- [15] R. Gambini "Teorías de Calibre en el espacio de ciclos", unpublished notes, Universidad Simón Bolívar (1986).
- [16] M. Blencowe, *Nucl. Phys.* **B 341**, 213 (1990).
- [17] R. Loll, *Theor. Math. Phys.* **93**, 1415 (1992).
- [18] I. Aref'eva, *Theor. Math. Phys* **43**, 353 (1980) (*Theor. Mat. Fiz.* **43**, 111 (1980)).

- [19] D. Marolf, *Class. Quan. Grav.* **10**, 2625 (1993).
- [20] C. Di Bartolo, R. Gambini, J. Griego, *Commun. Math. Phys.* **158**, 217 (1993).
- [21] C. Di Bartolo, R. Gambini, J. Griego, J. Pullin “The space of states of quantum gravity in terms of loops and extended loops: some remarks”, to appear in *J. Math. Phys.* (1995).
- [22] This construction was first presented to us by Abhay Ashtekar (private communication).
- [23] R. Loll, *Class. Quan. Grav.* **10**, 1471 (1993).
- [24] R. Loll, *Nuclear Physics* **B350**, 831 (1991). See also [26]
- [25] R. Loll, *Nucl. Phys.* **B400**, 126 (1993).
- [26] B. Brügmann, J. Pullin, *Nucl. Phys.* **B390**, 399 (1993).
- [27] P. A. M. Dirac “Lectures in Quantum Mechanics”, Yeshiva University, Belfer Graduate School of Science Monograph series, No. 2 (1964).
- [28] M. Henneaux, *Phys. Rep.* **126**, 1 (1985).
- [29] A. Hanson, T. Regge, C. Teitelboim, “Constrained Hamiltonian systems”, *Accademia Nazionale dei Lincei*, Rome (1976).
- [30] K. Sundermeyer, “Constrained dynamics”, *Lecture Notes in Physics*, **169**, Springer-Verlag, Berlin (1982).
- [31] R. Abraham, J. E. Marsden, “Foundations of mechanics”, 2nd edition, Benjamin, Reading, MA (1978).
- [32] V. Arnold, “Mathematical methods of classical mechanics”, Springer-Verlag, New York (1978).
- [33] V. W. Guillemin, “Symplectic techniques in physics”, Cambridge University Press, Cambridge (1984).
- [34] R. Gambini, A. Trias, *Nucl. Phys.* **B278**, 436 (1986).
- [35] R. Giles, *Phys. Rev.* **D24**, 2160 (1981).
- [36] A. Ashtekar, C. Isham, *Class. Quan. Grav.* **9**, 1069 (1992).
- [37] J. Glimm, A. Jaffe, “Quantum physics. A functional integral point of view”, 2nd edition, Springer Verlag, New York (1987).
- [38] C. Rovelli, L. Smolin, *Phys. Rev. Lett.* **61**, 1155 (1988).
- [39] C. Rovelli, L. Smolin, *Nucl. Phys.* **B331**, 80 (1990).
- [40] A. Ashtekar, J. Lewandowski, in “Knots and quantum gravity”, J. Baez editor, Oxford University Press, Oxford (1993).
- [41] C. Isham, in “Relativity, groups and topology II”, editors B.S. DeWitt and R. Stora, North-Holland, Amsterdam (1984), 1059–1290.
- [42] A. Pressley, G. Segal, “Loop groups”, Clarendon Press, Oxford (1986).
- [43] J. N. Tavares, *Int. J. Mod. Phys.* **A9**, 4511 (1994).

- [44] A. M. Polyakov, *Phys. Lett.* **B82**, 249 (1979); *Nucl. Phys.* **B164**, 171 (1979).
- [45] E. Witten, *Commun. Math. Phys.* **121**, 351 (1989).
- [46] E. Witten, *Nucl. Phys.* **B311**, 46 (1988).
- [47] C. Di Bartolo, J. Griego, *Phys. Lett.* **B317**, 540 (1993).
- [48] K. Wilson, *Phys. Rev.* **D10**, 2445 (1974).
- [49] J. Kogut, L. Susskind, *Phys. Rev.* **D11**, 395 (1975).
- [50] G. t'Hooft, *Nucl. Phys.* **B153**, 141 (1979).
- [51] A. Ashtekar, *Phys. Rev. Lett.* **57**, 2244 (1986); *Phys. Rev.* **D36**, 1587 (1987).
- [52] B. Brügmann, R. Gambini, J. Pullin, *Gen. Rel. Grav.* **25**, 1 (1993).
- [53] A. Ashtekar, "Lectures on non-perturbative quantum gravity", editors R. Kulkarni, J. Samuel, University of Poona press, Poona (1990).
- [54] H. Kodama, *Phys. Rev.* **D42**, 2548 (1990).
- [55] H. Kodama, *Int. J. Mod. Phys.* **D1**, 439 (1992).
- [56] A. Ashtekar in "Conceptual problems of quantum gravity", editors A. Ashtekar, J. Stachel, Birkhauser, Boston (1993).
- [57] K. Kuchař, in "Proceedings of the 4th Canadian meeting on Relativity and Relativistic Astrophysics", editors G. Kunstatter, D. Vincent, J. Williams, World Scientific, Singapore (1992).
- [58] P. Peldán, "Large Diffeomorphisms in (2+1)-quantum gravity on the torus" preprint gr-qc@xxx.lanl.gov:9501020 (1995).
- [59] R. Jackiw, in "Relativity, groups and topology II", editors B. DeWitt and L. Stora, North Holland, Amsterdam (1984).
- [60] J. Frieman, R. Sorkin, *Phys. Rev. Lett.* **44**, 1100 (1980); *Gen. Rel. Grav.* **14**, 615 (1982).
- [61] A. Ashtekar, A. P. Balachandran, S. Jo, *Int. J. Mod. Phys.* **A4**, 1493 (1989).
- [62] R. Gambini, A. Trias, *Phys. Rev.* **D22**, 1380 (1980).
- [63] C. Di Bartolo, F. Nori, R. Gambini, A. Trias, *Lett. Nuo. Cim.* **38**, 497 (1983).
- [64] G. Buendia, A. Trias, *Phys. Rev.* **D46**, 3649 (1992).
- [65] A. Ashtekar, C. Rovelli, *Class. Quan. Grav.* **9**, 1121 (1992).
- [66] J. Baez, in reference [218].
- [67] A. Rendall, *Class. Quan. Grav.* **10**, 605 (1993).
- [68] J. Goldberg, J. Lewandowski, C. Stornaiolo, *Commun. Math. Phys.* **148**, 377 (1992).
- [69] C. Rovelli, *Class. Quan. Grav. Class. Quan. Grav.* **8**, 1613 (1991).

- [70] V. Bargmann, Proc. Natl. Acad. Sci. (USA) **48**, 199 (1962).
- [71] J. Bjorken, S. Drell, "Relativistic quantum fields", McGraw-Hill, New York (1965).
- [72] D. Armand-Ugon, J. Griego, R. Gambini, L. Setaro, Phys. Rev. **D50**, 5352 (1994).
- [73] A. Ashtekar, C. Isham, Phys. Lett. **B274**, 393 (1992).
- [74] J. B. Kogut, Rev. Mod. Phys. **51**, 659 (1979).
- [75] S. L. Glashow, Nucl. Phys. **22**, 579 (1961); A. Salam, J. C. Ward, Phys. Lett. **13**, 168 (1964); S. Weinberg, Phys. Rev. Lett. **18**, 507; **19**, 1264 (1967).
- [76] C. N. Yang, R. L. Mills, Phys. Rev. **96**, 191 (1954).
- [77] C. G. Bollini, J. J. Giambiagi, Phys. Lett. **40D**, 566 (1972).
- [78] G. t'Hooft, Nucl. Phys. **B33**, 173; **B35**, 167 (1971); G. t'Hooft, M. Veltman, Nucl. Phys. **B44**, 189 (1972).
- [79] R. Feynman, Acta Phys. Polonica **24**, 697 (1963).
- [80] B. DeWitt, Phys. Rev. **162**, 195 (1967).
- [81] L. Fadeev, V. Popov, Phys. Lett. **25B**, 29 (1967).
- [82] A. M. Polyakov, Nucl. Phys. **82B**, 247 (1979).
- [83] A. M. Polyakov, Nucl. Phys. **B164**, 171 (1979).
- [84] A. M. Polyakov, "Gauge fields and strings", Harwood Academic Publishers, New York (1987).
- [85] C.-H. Gu, L.-L. Wang, Phys. Rev. Lett. **25**, 2004 (1980).
- [86] A. A. Migdal, Ann. Phys. **126**, 279 (1980).
- [87] T. Eguchi, Phys. Lett. **B87**, 91 (1979); D. Foerster, Nucl. Phys. **B170**, 107 (1980); Phys. Lett. **B87**, 87 (1979).
- [88] R. A. Brandt, A. Gocksch, M.-A. Sato, F. Neri, Phys. Rev. **D26**, 3611 (1982).
- [89] R. Gambini, J. Griego, Phys. Lett. **B256**, 437 (1991).
- [90] V. Kazakov, Nucl. Phys. **B179**, 283 (1981); V. Kazakov, V. Kostov, Nucl. Phys. **B176**, 199 (1980).
- [91] A. A. Migdal, Zh. Eksp. Teor. Fiz. **69**, 810 (1975). (Sov. Phys. JETP **42**, 413 (1975).)
- [92] A. A. Migdal, Nucl. Phys. Supplement Series **B4**, 59 (1988).
- [93] E. Karjalainen, Nucl. Phys. **B413**, 84 (1994).
- [94] J.-L. Gervais, A. Neveu, Phys. Lett. **B80**, 255 (1979); also in "Gauge theories in high energy physics : Les Houches, session XXXVII", editors M. Gaillard, R. Stora, North-Holland, Amsterdam (1983).

- [95] J.M. Aroca-Farrerons, Ph. D. Thesis, Universitat Autònoma de Barcelona (unpublished) (1992).
- [96] J. Baez, in reference [217].
- [97] R. Gambini, J. Pullin, Phys. Rev. **D47**, R5214 (1993).
- [98] M. Creutz, "Quarks, gluons and lattices", Cambridge University Press, Cambridge (1983).
- [99] G. t'Hooft, Nucl. Phys. **B138**, 1 (1978).
- [100] S. Mandelstam, Phys. Rev. **D19**, 2391 (1979).
- [101] R. Gambini, A. Trias, Phys. Lett. **B141**, 403 (1984).
- [102] J. Hetrick, Phys. Lett. **B230**, 88 (1994); Int. J. Mod. Phys. **A9** 3153 (1994).
- [103] J. Hallin, Class. Quan. Grav. **11**, 1615 (1994).
- [104] F. Wegner, J. Math. Phys. **12**, 2259 (1971).
- [105] N. Metropolis, A. Rosebluth, M. Rosebluth, A. Teller, E. Teller, J. Chem. Phys. **21**, 1087 (1953).
- [106] K. Wilson, Phys. Rep. **23C**, 331 (1976).
- [107] M. Creutz, Phys. Rev. **D21**, 2308 (1980).
- [108] R. Gambini, A. Trias, Phys. Rev. Lett. **53**, 25 (1984).
- [109] B. Brüggmann, Phys. Rev. **D43**, 566 (1991).
- [110] R. Gambini, A. Leal, A. Trias, Phys. Rev. **D39**, 3127 (1989).
- [111] S. Elitzur, Phys. Rev. **D12**, 3978 (1975).
- [112] M. Creutz, Phys. Rev. **D15**, 1128 (1977).
- [113] T. Schultz, D. Mattis, E. Lieb, Rev. Mod. Phys. **36**, 856 (1964).
- [114] C. Di Bartolo, R. Gambini, A. Trias, Phys. Rev. **D39**, 3136 (1989).
- [115] W. Furmanski, A. Kolawa, Nucl. Phys. **B291**, 594 (1987).
- [116] R. Feynman, Nucl. Phys. **B188**, 479 (1981).
- [117] A. Irving, C. Hamer, Z. Phys. **C27**, 307 (1985).
- [118] A. Irbäck, C. Peterson, Phys. Lett. **B174**, 99 (1986).
- [119] E. D'Hoker, Nucl. Phys. **180**, 341 (1981).
- [120] L. Susskind, Phys. Rev. **D16**, 3031 (1977).
- [121] R. Gambini, H. Fort, Phys. Rev. **D44**, 1257 (1991).
- [122] R. Gambini, L. Setaro, "SU(2) QCD in the path representation", to appear in Nucl. Phys. **B** (1995).
- [123] R. M. Wald, "General relativity", University of Chicago Press, Chicago (1984).
- [124] R. Arnowitt, S. Deser, C. Misner, in "Gravitation: an introduction to current research", editor L. Witten, Wiley, New York (1962).

- [125] B. DeWitt, *Phys. Rev.* **150**, 1113 (1967).
- [126] R. Utiyama, *Phys. Rev.* **101**, 1597 (1956).
- [127] J. Kijowski, "On a purely affine formulation of general relativity", *Springer Lecture Notes in Mathematics*, **836**, Springer, New York (1980).
- [128] A. Palatini, *Rend. Circ. Mat. Palermo* **43**, 203 (1917).
- [129] G. Horowitz, *Class. Quan. Grav.* **8**, 587 (1991).
- [130] A. Ashtekar, R. Tate, *J. Math. Phys.* **35**, 6434 (1994).
- [131] K. Kuchař, in "General Relativity and Gravitation 1992", editors R. J. Gleiser, C. N. Kozameh, O. M. Moreschi, Institute of Physics Publishing, Bristol (1993).
- [132] G. González, R. Tate, *Class. Quan. Grav.* **12**, 1287 (1995).
- [133] A. Ashtekar, J. Romano, R. Tate, *Phys. Rev.* **D40**, 2572 (1989).
- [134] T. Jacobson, L. Smolin, *Nucl. Phys.* **B299**, 295 (1988).
- [135] O. Obregón, J. Pullin, M. Ryan, *Phys. Rev.* **D48**, 5642 (1993).
- [136] V. Husain, *Nucl. Phys.* **B313**, 711 (1989).
- [137] B. Brügmann, R. Gambini, J. Pullin, *Nucl. Phys.* **B385**, 587 (1992).
- [138] R. Gambini, *Phys. Lett.* **B255**, 180 (1991).
- [139] B. Brügmann, J. Pullin, *Nucl. Phys.* **390**, 399 (1993).
- [140] C. Rovelli, L. Smolin, *Phys. Rev. Lett.* **72**, 446 (1994).
- [141] R. Gambini, A. Garat, J. Pullin, "The constraint algebra of quantum gravity in the loop representation", *Int. J. Mod. Phys. D* (in press) (1995).
- [142] N. Tsamis, R. Woodard, *Phys. Rev.* **D36**, 3691 (1987).
- [143] J. Friedman, I. Jack, *Phys. Rev.* **D37**, 3495 (1987).
- [144] C. Rovelli, "Outline of a generally covariant quantum field theory and a quantum field theory of gravity" preprint gr-qc@xxx.lanl.gov:9503067 (1995).
- [145] L. Smolin, "Quantum gravity and cosmology. Proceedings, 22nd GIFT International Seminar on Theoretical Physics, Sant Feliu de Guixols, Spain", editors J. Perez-Mercader, J. Solá, E. Verdaguer, World Scientific, Singapore (1992).
- [146] C. Rovelli, L. Smolin, *Nucl. Phys.* **B442**, 593 (1995).
- [147] T. Jacobson, *Class. Quan. Grav.* **5**, L143 (1988).
- [148] J. Samuel, *Pramāna*, **28**, L429 (1987).
- [149] H. Morales-Técotl, C. Rovelli, *Phys. Rev. Lett.* **72**, 3642 (1994).
- [150] S. Chakraborty, P. Peldán, *Phys. Rev. Lett.* **73**, 1195 (1994).
- [151] G. Chapline, N. Manton, *Phys. Lett.* **B120**, 105 (1983).

- [152] F. Wilczek, *Phys. Rev. Lett.* **40**, 279 (1978); S. Weinberg, *Phys. Rev. Lett.* **40**, 223 (1978). For a review of axions see, for example, J. Kim, *Phys. Rep.* **150**, 1 (1987).
- [153] L. Smolin, in “Proceedings of the 12th Johns Hopkins meeting, Knots, Topology and Quantum Field theory”, editor L. Lusanna, World Scientific, Singapore (1989).
- [154] D. Freedman, P. Townsend, *Nucl. Phys.* **B177**, 287 (1981).
- [155] P. Arias, C. Di Bartolo, X. Fuster, R. Gambini, A. Trias, *Int. J. Mod. Phys.* **A7**, 737 (1992).
- [156] R. Gambini, *Phys. Lett.* **B131**, 251 (1986).
- [157] A. Ashtekar, V. Husain, C. Rovelli, J. Samuel, L. Smolin, *Class. Quan. Grav.* **6**, 185 (1989).
- [158] I. Bengtsson, *Phys. Lett.* **B220**, 51 (1989).
- [159] F. Barbero, M. Varadarajan, *Nucl. Phys.* **B415**, 515 (1994).
- [160] S. Martin, *Nucl. Phys.* **B**
- [161] P. Peldán, “A Modular Invariant Quantum Theory From the Connection Formulation of (2+1)-Gravity on the Torus”, preprint gr-qc@xxx.lanl.gov:9504014 (1995).
- [162] J. Louko, D. Marolf, *Class. Quan. Grav.* **11**, 311 (1994).
- [163] A. Ashtekar, R. Loll, *Class. Quan. Grav.* **11**, 2417 (1994).
- [164] S. Carlip, in “Proceedings of the 5th Canadian conference on relativistic astrophysics”, editors R. Mann, R. McLenaghan, World Scientific, Singapore (1994).
- [165] A. Ashtekar, in “Strings '90”, editor R. Arnowitt, World Scientific, Singapore (1990).
- [166] C. Rovelli, *Phys. Rev.* **D47**, 1703 (1993).
- [167] A. Ashtekar, C. Rovelli, L. Smolin, *Phys. Rev. Lett.* **69**, 237 (1992).
- [168] J. Iwasaki, C. Rovelli, *Int. J. Mod. Phys.* **D1**, 533 (1993); *Class. Quan. Grav.* **11**, 1653 (1994).
- [169] V. Husain, *Class. Quan. Grav.* **10**, L233 (1993).
- [170] C. Rovelli, *Nucl. Phys.* **B405**, 1797 (1993).
- [171] M. Kalb, P. Ramond, *Phys. Rev.* **D9**, 2273 (1974).
- [172] L. Smolin, *Phys. Rev.* **D49**, 4028 (1994).
- [173] L. Garay, *Int. J. Mod. Phys.* **A10** 145 (1995).
- [174] J. C. Maxwell, “A treatise on electricity and magnetism,” Volume II, Oxford (1873).
- [175] S. Majid, *J. Math. Phys.* **31**, 925 (1990).
- [176] P. G. Tait, “Scientific Papers”, Cambridge (1898).

- [177] L. Kauffman, "On knots", *Annals of Mathematics Studies*, Princeton University Press, Princeton (1987).
- [178] L. Kauffman "Knots and physics", *World Scientific Series on Knots and Everything 1*, World Scientific, Singapore (1991).
- [179] E. Guadagnini, in "Nonperturbative methods in low dimensional quantum field theories, proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory 14, Debrecen, 1990 (August 27-30)" editors G. Domokos, Z. Horvath, S. Kovesi-Domokos, World Scientific, Singapore (1991).
- [180] E. Guadagnini, "The link invariants of the Chern-Simons field theory, new developments in topological quantum field theory", *De Gruyter expositions in mathematics*, **10**, W. De Gruyter, New York (1993).
- [181] J. Baez, J. Muniain, "Gauge fields, knots and gravity", *World Scientific Series on Knots and Everything*, **4**, World Scientific, Singapore (1995).
- [182] C. Adams, "The knot book, an elementary introduction to the mathematical theory of knots", W. H. Freeman, San Francisco (1994).
- [183] D. Armand-Ugon, R. Gambini, P. Mora, *Phys. Lett.* **B305**, 214 (1993).
- [184] B. Brüggemann, *Int. J. Theor. Phys.* **34**, 145 (1995).
- [185] P. Cotta-Ramusino, E. Guadagnini, M. Martellini, M. Mintchev *Nucl. Phys.* **B330**, 557 (1990).
- [186] L. Smolin, *Mod. Phys. Lett.* **A4** 1091 (1989).
- [187] E. Guadagnini, M. Martellini, M. Mintchev, *Phys. Lett.* **B227**, 111 (1989).
- [188] V. Vassiliev, *Adv. in Sov. Math*, **1**, AMS, Providence, RI (1990).
- [189] L. Kauffman, *Enseign. Math.* **36**, 1 (1990).
- [190] A. Balachandran, M. Bourdeau, S. Jo, *Int. J. Mod. Phys.* **A5**, 2423 (1990).
- [191] J. Leinaas, J. Myrheim, *Nuo. Cim.* **B37**, 1 (1977).
- [192] F. Wilczek, *Phys. Rev. Lett.* **49**, 957 (1982).
- [193] Y. Wu, A. Zee, *Phys. Lett.* **B147**, 325 (1994).
- [194] J. White, *Amer. J. Math.* **91**, 693 (1969).
- [195] W. Bauer, F. Creek, J. White, *Sci. Am.* **243**, 118 (1980).
- [196] A. Polyakov, *Mod. Phys. Lett.* **A3**, 325 (1988).
- [197] J. Alexander, *Trans. Am. Math. Soc.* **20**, 275 (1923).
- [198] J. Conway, in "Computational Problems in Abstract Algebra," editor J. Leech, Pergamon Press, London (1969).
- [199] V. Jones, *Bull. Am. Math. Soc.* **129**, 103 (1985).
- [200] J. Hoste, A. Ocneanu, K. Millet, P. Freyd, W. Lickorish, D. Yetter, *Bull. Am. Math. Soc.* **129**, 239 (1985).



- [201] P. Kulish, N. Reshetikhin, E. Sklyanin, *Lett. Math. Phys.* **5**, 393 (1981).
- [202] V. Turaev, *Invent. Math.* **92**, 527 (1988).
- [203] A. Ashtekar, J. Lewandowski, D. Marolf, J. Mourão, T. Thiemann, “Coherent state transforms for spaces of connections”, preprint gr-qc@xxx.lanl.gov:9412014, to appear in *J. Funct. Anal.* (1995).
- [204] A. Ashtekar, D. Marolf and J. Mourão, in “The Proceedings of the Lanczos International Centenary Conference”, editors J. Brown *et al.* SIAM, Philadelphia (1994).
- [205] E. Guadagnini, M. Martellini, M. Mintchev, *Nucl. Phys.* **B330**, 575 (1990).
- [206] R. Gambini, J. Pullin, in “Knots and quantum gravity”, editor J. Baez, Oxford University Press, Oxford (1993).
- [207] A. Ashtekar, C. Rovelli, L. Smolin, *Phys. Rev.* **D44**, 1740 (1991).
- [208] L. Smolin, *Class. Quan. Grav.* **9**, 883 (1992).
- [209] B. Brüggmann, R. Gambini, J. Pullin, *Phys. Rev. Lett.* **68**, 431 (1992).
- [210] J. Griego, private communication.
- [211] G. Hall, *J. Funct. Anal.* **122**, 103 (1994).
- [212] A. Ashtekar, J. Lewandowski, D. Marolf, J. Mourão, T. Thiemann, in “Geometry of constrained dynamical systems”, editor J. Charap, Publications of the Newton Institute, series editor P. Goddard, Cambridge University Press, Cambridge (1995).
- [213] R. Loll, “Chromodynamics and gravity as theories in loop space” preprint hep-th@xxx.lanl.gov:9309056 (1993).
- [214] J. Watson, in “QCD 94: proceedings of QCD 94, Montpellier, France, 7-13 July 1994”, editors S. Narison, *Nucl. Phys. Proceedings supplements* **B39**, North-Holland, Amsterdam (1995).
- [215] J. Aroca-Farrerons, H. Fort, *Phys. Lett.* **B325**, 166 (1994).
- [216] J. Aroca-Farrerons, M. Baig, H. Fort, *Phys. Lett.* **B336**, 54 (1994).
- [217] J. Baez, “Knots and quantum gravity”, Oxford University Press, Oxford (1994).
- [218] “Conference on Quantum Topology, 1993, Kansas State University. Proceedings of the Conference on Quantum Topology, Kansas State University, Manhattan, Kansas, 24-28 March 1993”, editor D. Yetter, World Scientific, Singapore (1994).
- [219] R. Baadhio, L. Kauffman, “Quantum Topology”, World Scientific Series on Knots and Everything, **3**, World Scientific, Singapore (1993).
- [220] C. Rovelli, *Phys. Rev.* **D48**, 2702 (1993).
- [221] R. Gambini, P. Mora, “Intrinsic Time and Evolving Hilbert Spaces in Relational Dynamical Systems and Quantum Gravity”, preprint hep-th@xxx.lanl.gov:9404169 (1994).

- [222] T. Schilling, “Noncovariance of the extended holonomy: examples” preprint gr-qc@xxx.lanl.gov:9503064 (1995).
- [223] C. Torre, *Class. Quan. Grav.* **8**, 1895 (1991).
- [224] C. Di Bartolo, R. Gambini, J. Griego, J. Pullin, *Phys. Rev. Lett.* **72**, 3638 (1994).
- [225] C. Di Bartolo, R. Gambini, J. Griego, *Phys. Rev.* **D51**, 502 (1995).