- timelike Regions," Phys. Rev. D 77, 056007 (2008) [arXiv:0707.3859 [hep-ph]].
- [6] S. J. Brodsky and G. F. de Teramond, "Light-Front Dynamics and AdS/QCD Correspondence: Gravitational Form Factors of Composite Hadrons," Phys. Rev. D 78, 025032 (2008) [arXiv:0804.0452 [hep-ph]].
- [7] G. F. de Teramond and S. J. Brodsky, "Light-Front Holography and Gauge/Gravity Duality: The Light Meson and Baryon Spectra," Nucl. Phys. B, Proc. Suppl. 199, 89 (2010) [arXiv:0909.3900 [hep-ph]].
- [8] G. F. de Teramond and S. J. Brodsky, "Light-Front Quantization Approach to the Gauge-Gravity Correspondence and Hadron Spectroscopy," arXiv:1001.5193 [hep-ph].
- [9] G. Grunberg, "Renormalization Group Improved Perturbative QCD," Phys. Lett. B 95, 70 (1980); "Renormalization Scheme Independent QCD and QED: The Method of Effective Charges," Phys. Rev. D 29, 2315 (1984); "On Some Ambiguities in the Method of Effective Charges", Phys. Rev. D 40, 680 (1989).
- [10] S. J. Brodsky and H. J. Lu, "Commensurate scale relations in quantum chromodynamics," Phys. Rev. D 51, 3652 (1995) [arXiv:hep-ph/9405218]; S. J. Brodsky, G. T. Gabadadze, A. L. Kataev and H. J. Lu, "The generalized Crewther relation in QCD and its experimental consequences," Phys. Lett. B 372, 133 (1996) [arXiv:hep-ph/9512367].
- [11] T. Appelquist, M. Dine and I. J. Muzinich, "The Static Potential in Quantum Chromodynamics," Phys. Lett. B 69, 231 (1977); "The Static Limit of Quantum Chromodynamics," Phys. Rev. D 17, 2074 (1978).
- [12] J. D. Bjorken, "Applications of the Chiral $U(6) \otimes U(6)$ Algebra of Current Densities," Phys. Rev. 148, 1467 (1966).
- [13] A. Deur, "Study of spin sum rules and the strong coupling constant at large distances," arXiv:0907.3385 [nucl-ex].
- [14] One can question the relevance of fundamental quark constituents and couplings in the domain below the transition regime since the effective degrees of freedom are hadronic. To answer this, consider the EM form factor of a pion $F(Q^2)$ defined by the transition matrix element of the EM current between hadronic states $\langle P'|J^{\mu}|P\rangle = (P+P')F(Q^2)$, an expression valid for any value of the momentum transfer Q = P' P. Thus even if Q is near zero, the EM couplings are dictated by the quark current $J^{\mu} = e_q \bar{q} \gamma^{\mu} q$. The gluon couples in a similar way to the fundamental constituents. Thus hadronic interactions at any scale are governed by the