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  The author construct the pure gravity BRST Einstein Hilbert Lagrangian, to cubic order, using the BRST convolution product and BCJ double-copy.

- J. Plefka, C. Shi and T. Wang, "Double copy of massive scalar QCD," Phys. Rev. D **101**, no.6, 066004 (2020) doi:10.1103/PhysRevD.101.066004 [arXiv:1911.06785 [hep-th]]. 56 citations counted in INSPIRE as of 17 Sep 2024
  The author construct the gravitational theory emerging from the double-copy of massive scalar quantum chromodynamics in general dimensions.

- D. A. Easson, G. Herczeg, T. Manton and M. Pezzelle, "Isometries and the double copy," JHEP **09**, 162 (2023) doi:10.1007/JHEP09(2023)162 [arXiv:2306.13687 [gr-qc]]. 18 citations counted in INSPIRE as of 17 Sep 2024
The authors show that the geodicity of the Kerr-Schild vector and the existence of a timelike Killing vector, are in fact consequences of the vacuum conditions instead of assumptions.

Gravitational waves

- P. Di Vecchia, C. Heissenberg, R. Russo and G. Veneziano, "The gravitational eikonal: From particle, string and brane collisions to black-hole encounters," Phys. Rept. **1083**, 1-169 (2024) doi:10.1016/j.physrep.2024.06.002 [arXiv:2306.16488 [hep-th]]. 60 citations counted in INSPIRE as of 16 Sep 2024
Review paper. The author discuss how the gravitational ekinoal approach can be applied to invarious different physical set ups involving particles,strings and branes and then we mainly concentrate on the most recent developments.

Effective theories of BH

- L. Cangemi, M. Chiodaroli, H. Johansson, A. Ochirov, P. Pichini and E. Skvortsov, "Kerr Black Holes From Massive Higher-Spin Gauge Symmetry," Phys. Rev. Lett. **131**, no.22, 221401 (2023) doi:10.1103/PhysRevLett.131.221401 [arXiv:2212.06120 [hep-th]]. 52 citations counted in INSPIRE as of 16 Sep 2024
The author propose that the dynamics of Kerr black holes is strongly constrained by the principle of gauge symmetry, and show that the known three-point Kerr amplitudes are uniquely predicted using massive higher-spin gauge symmetry.

Classical and Quantum gravitational scattering

- R. Aoude, K. Haddad and A. Helset, "Classical Gravitational Spinning-Spinless Scattering at O(G2S∞)," Phys. Rev. Lett. **129**, no.14, 141102 (2022) doi:10.1103/PhysRevLett.129.141102 [arXiv:2205.02809 [hep-th]]. 73 citations counted in INSPIRE as of 16 Sep 2024
The author calculate the classical gravitational scattering amplitude for one spinning and one spinless object at $O(G^2)$ and all orders in spin, which exhibits the spin structure that has been conjectured to describe Kerr black holes

- F. Alessio and P. Di Vecchia, "Radiation reaction for spinning black-hole scattering," Phys. Lett. B **832**, 137258 (2022) doi:10.1016/j.physletb.2022.137258 [arXiv:2203.13272 [hep-th]]. 54 citations counted in INSPIRE as of 16 Sep 2024
Starting from the leading soft term of the 5-point amplitude, involving a graviton and two Kerr black holes, the author determine the radiative contribution to the real part of the two-loop eikonal.

- G. U. Jakobsen and G. Mogull, "Conservative and Radiative Dynamics of Spinning Bodies at Third Post-Minkowskian Order Using Worldline Quantum Field Theory," Phys. Rev. Lett. **128**, no.14, 141102 (2022) doi:10.1103/PhysRevLett.128.141102

[arXiv:2201.07778 [hep-th]]. 96 citations counted in INSPIRE as of 16 Sep 2024
Using the spinning worldline quantum field theory formalism, the author compute the conservative scattering angle and the radiation-reaction effects.

- A. Cristofoli, R. Gonzo, N. Moynihan, D. O'Connell, A. Ross, M. Sergola and C. D. White, "The uncertainty principle and classical amplitudes," JHEP **06**, 181 (2024) doi:10.1007/JHEP06(2024)181 [arXiv:2112.07556 [hep-th]]. 80 citations counted in INSPIRE as of 16 Sep 2024
The author discussed how the classical limit is encoded in the quantum-first definition of field theory through scattering amplitudes

- R. Aoude and A. Ochirov, "Classical observables from coherent-spin amplitudes," JHEP **10**, 008 (2021) doi:10.1007/JHEP10(2021)008 [arXiv:2108.01649 [hep-th]]. 75 citations counted in INSPIRE as of 16 Sep 2024
The author promote the KMOC formalism to describe general classical spinning objects by using coherent spin states.

- C. Cheung, N. Shah and M. P. Solon, "Mining the Geodesic Equation for Scattering Data," Phys. Rev. D **103**, no.2, 024030 (2021) doi:10.1103/PhysRevD.103.024030 [arXiv:2010.08568 [hep-th]]. 65 citations counted in INSPIRE as of 17 Sep 2024
The author explore how the geodesic equation encodes conservative dynamics in the presence of an arbitrary perturbative correction away from a non-spinning black hole binary system in general relativity.

- A. Luna, N. Moynihan, D. O'Connell and A. Ross, "Observables from the spinning eikonal," JHEP **08**, 045 (2024) doi:10.1007/JHEP08(2024)045 [arXiv:2312.09960 [hep-th]]. 14 citations counted in INSPIRE as of 17 Sep 2024
The author study the classical dynamics of spinning particles using scattering amplitudes and eikonal exponentiation.

- D. Kosmopoulos and M. P. Solon, "Gravitational self force from scattering amplitudes in curved space," JHEP **03**, 125 (2024) doi:10.1007/JHEP03(2024)125 [arXiv:2308.15304 [hep-th]]. 18 citations counted in INSPIRE as of 17 Sep 2024
The author employ scattering amplitudes in curved space to model the dynamics of a light probe particle orbiting in the background spacetime.

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Holography

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Formal Amplitude Method

- A. S. K. Chen, H. Elvang and A. Herderschee, "Bootstrapping the String Kawai-Lewellen-Tye Kernel," Phys. Rev. Lett. **131**, no.3, 031602 (2023) doi:10.1103/PhysRevLett.131.031602 [arXiv:2302.04895 [hep-th]].
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This paper extends the minimal rank KLT bootstrap to 6-point, finding novel restrictions on the 4 and 5-point double-copy maps.