

“Amplitudes in Gauge Theories”

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Abstract:

Included here are the collection of research papers on amplitudes in gauge theories for which the degree of Doctorate of Science was awarded.

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Section 1: Seminal Paper¹

- **“An Amplitude for n Gluon Scattering”**

Abstract: A non-trivial, squared helicity amplitude is given for the scattering of an arbitrary number of gluons to lowest order in the coupling constant and to leading order in the number of colors.

S. J. Parke and T. R. Taylor.

Phys. Rev. Lett. **56**, 2459 (1986).

INSPIRES [HEP entry](#) DOI: [10.1103/PhysRevLett.56.2459](https://doi.org/10.1103/PhysRevLett.56.2459)

Section 2: Followup Papers

1. **“Dual Amplitudes and Multi - Gluon Processes”**

M. L. Mangano, S. J. Parke and Z. Xu.

Presented at “1st Les Rencontres de Physique de la Vallée d’Aoste: Results and Perspectives in Particle Physics,” C87-03-01

Mar 1-7, 1987, La Thuile, Italy.

INSPIRES [HEP entry](#) Preprint [Fermilab-Conf-87-078-T](#)

2. **“Duality and Multi - Gluon Scattering”**

M. L. Mangano, S. J. Parke and Z. Xu.

Nucl. Phys. B **298**, 653 (1988).

INSPIRES [HEP entry](#) DOI: [10.1016/0550-3213\(88\)90001-6](https://doi.org/10.1016/0550-3213(88)90001-6)

3. **“Quark - Gluon Amplitudes in the Dual Expansion”**

M. L. Mangano and S. J. Parke.

Nucl. Phys. B **299**, 673 (1988).

INSPIRES [HEP entry](#) DOI: [10.1016/0550-3213\(88\)90368-9](https://doi.org/10.1016/0550-3213(88)90368-9)

4. **“Multiparton amplitudes in gauge theories”**

M. L. Mangano and S. J. Parke.

Phys. Rept. **200**, 301 (1991)

INSPIRES [HEP entry](#) DOI: [10.1016/0370-1573\(91\)90091-Y](https://doi.org/10.1016/0370-1573(91)90091-Y)

¹For copyright reasons only [hypertext links](#) to the published papers are provided here.

Section 3: Precursor Papers

1. **“Perturbative QCD Utilizing Extended Supersymmetry”**
S. J. Parke and T. R. Taylor.
Phys. Lett. B **157**, 81 (1985).
INSPIRES [HEP entry](#) DOI: [10.1016/0370-2693\(85\)91216-X](https://doi.org/10.1016/0370-2693(85)91216-X)
2. **“Gluonic Two Goes to Four”**
S. J. Parke and T. R. Taylor.
Nucl. Phys. B **269**, 410 (1986).
INSPIRES [HEP entry](#) DOI: [10.1016/0550-3213\(86\)90230-0](https://doi.org/10.1016/0550-3213(86)90230-0)
3. **“The Cross-Section for Hard Processes Involving Two Quarks and Four Gluons”**
S. J. Parke and T. R. Taylor.
Phys. Rev. D **35**, 313 (1987).
INSPIRES [HEP entry](#) DOI: [10.1103/PhysRevD.35.313](https://doi.org/10.1103/PhysRevD.35.313)

Appendix: Preprint Version of Seminal Paper

- **“An Amplitude for n Gluon Scattering”**
S. J. Parke and T. R. Taylor.
Preprint [Fermilab-Pub-86/42-T](#)

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