

“Amplitudes in Gauge Theories”

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May 2018

Abstract:

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

This manuscript has been authored by Fermi Research Alliance, LLC under Contract No. DE-AC02-07CH11359 with the U.S. Department of Energy, Office of Science, Office of High Energy Physics.

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 Vallee 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](#)

Acknowledgements:

I would like to take this opportunity to give my deepest thanks to my collaborators, Tomasz Taylor, Michelangelo Mangano and Zhan Xu for the fabulous adventure of discovery that we shared during this pioneering investigation of the simplicity of on-mass shell amplitudes in gauge theories. I, also, thank Fermilab for providing an amazing atmosphere for scientific discovery during this period.

Many of my teachers and mentors at various stages of my education also deserve my sincerest thanks, especially Vincent Jury, Daniel Walls, Sidney Coleman and Sidney Drell.

My parents, William and Muriel Parke, as well as my mother's mother, Elizabeth Stephens (nee Ball), I truly thank for instilling in me an unrelenting curiosity about the physical world around us.

Finally, and most importantly, I want to thank my wonderful spouse, Winifred Haun, and our fabulous children, Athena, Iris and Selene, for all of their support during all of my physics adventures.