

Special Issue on **Amplitudes in Gauge Theories and String Theories**

CALL FOR PAPERS

Inspired by Witten's seminal work on gauge theory amplitudes and string theory in twistor space, there have been tremendous developments on calculations of higher point and higher loop Yang-Mills and gravity field theory amplitudes. Many new ideas and techniques have been proposed and suggested on this interesting subject. On the other hand, there was an old conjecture of Gross which stated that an infinite number of linear relations among string scattering amplitudes of different string states existed in the hard string scattering limit. Since string theory amplitudes have been believed to be closely related to results derived in field's theory amplitudes, many interesting connections between these two closely related research fields remain to be uncovered.

On the other hand, recently, the realization of hidden geometric nature of scattering amplitudes has brought deep insight into the fundamental principles of physics. Originated from the quest of unifying the seemingly different representation of the same scattering amplitude, the reformulation of scattering amplitudes as volumes of polytope has led to surprising simple statement of what the answer is for planar $N=4$ SYM. Several aspects of this formulation have found extension to nonplanar $N=4$ SYM, nonmaximal SYM, and supersymmetric gauge theories in other dimensions.

In this special issue, to promote researches on amplitude calculations of field theories and string theories, we invite investigators from both fields to contribute original research articles as well as review articles. Hopefully, the publications of this issue will stimulate interplay between these two research activities.

Potential topics include but are not limited to the following:

- ▶ Exact, high energy, and low energy string scattering amplitudes
- ▶ The geometrization of scattering amplitudes in gauge theories
- ▶ Symmetries and relations among amplitudes
- ▶ Connections between string and field theory amplitudes
- ▶ Higher point string amplitudes

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First Round of Reviews

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