

This is a review article of the studies of scattering amplitudes in gauge theories prepared by Lance J Dixon, one of the experts in loop calculations by use of now a standard unitary-cut method, for a special issue of the journal dedicated to this fast-growing area of research. The first overviewing section is remarkable. It encompasses almost all major results in the recent progress, yet neatly describing history of the subject, background of physical motivations, and detailed explanations to each of the recent developments. Description of gauge theories by categorizing them under planar and non-planar  $\mathcal{N} \leq 4$  super Yang-Mills, massless and massive gauge theories are refreshing and explanation of loop properties in each type of the amplitudes is very clear. It also reviews recent progress in computation of amplitudes in gravitational theories. The description is narrative without using equations yet contains a lot of information of the structure of relativistic scattering amplitudes. Thus the readers may well enjoy digesting the bulk of recent developments (which are otherwise too overwhelming to grasp). The rest of the review deals with basic materials of the subject, *i.e.*, color and kinematic structure of the amplitudes, the spinor-helicity formalism, and so on.

The purpose of this review article seems to present an overview of the recent developments. For those readers who are interested in details of specific properties of the amplitudes, *e.g.*, dual superconformal symmetry, Yangian symmetry, physics behind the MHV rules, use of polylogarithms in loop calculations, etc., it is recommended to refer to other contributions to the same special issue of the journal.