



**NEW YORK CITY COLLEGE OF TECHNOLOGY**  
**Physics Department**  
**Center for Theoretical Physics**



# **New Approaches to Scattering Amplitudes: From On-Shell Diagrams to the Amplituhedron**

*Presented by:*

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**Namm, Room 823**

**Abstract**

Formidable progress in our understanding of scattering amplitudes in gauge theory has been achieved in the last two decades. The progress is especially impressive for amplitudes in  $N=4$  super Yang-Mills. This talk is devoted to a new formulation of scattering amplitudes in this theory based on on-shell diagrams, which provide a natural bridge connecting gauge theory to powerful mathematical structures such as the Grassmannian. We will also discuss the Amplituhedron. This new algebraic geometric object encodes scattering amplitudes in a maximally geometric way: they are simply given by its volume.