

Basis Light-Front Quantization: Foundations, Recent Results and Plans

lundi 18 septembre 2023 16:10 (1h 20m)

Basis Light Front Quantization (BLFQ) provides a foundation for the development of Hamiltonians and numerical methods to solve both relativistic bound state and scattering applications in QED and QCD. For QCD applications in limited Fock spaces, one assumes a form of confinement based on light-front holography along with an additional longitudinal confinement. For applications limited to valence quarks, an effective one-gluon exchange interaction in light front gauge is employed. Recent developments include expanding Fock spaces beyond valence fermions to include the dynamical gauge degrees of freedom which provide direct access to gluonic contributions to amplitudes and distribution functions. Since the light front wave functions are interpreted as appropriate to a low-resolution scale, calculated observables such as parton distribution functions (PDFs) can be QCD-evolved to higher scales for comparison with experiments. I will survey recent applications to mesons and baryons and discuss prospects for future developments.

Auteur principal: Prof. VARY, James (Iowa State University)

Orateur: Prof. VARY, James (Iowa State University)

Classification de Session: Plenary