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Radiative Quarkonium Transitions in Relativistic Light-Front Approach

Saturday, 27 June 2026 15:00 (2 hours)

Renewed interest in the structure and internal properties of quarkonia and quarkonium-like states has prompted further investigation. We will analyse the radiative transitions of specific $Q\bar{Q}$ states within the light-front wave function framework. Particular attention is given to higher excited states, which may provide insight into possible exotic states. Our model applies the Melosh transform to the spin component, which effectively accounts for relativistic quark spin rotations. Meanwhile, the radial component is obtained from the Schrödinger equation and mapped onto the light front via the Terentiev prescription.
We will present the calculated decay widths for several representative radiative quarkonium transitions, including both electric dipole (E1) and magnetic dipole (M1) processes.

Collaboration

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