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On electromagnetic and gravitational form factors of the ρ meson

The ρ meson electromagnetic and gravitational form factors are studied based on a light-front constituent quark model which considers the ρ meson as a bound state of a quark-antiquark pair. The generalized parton distriction functions (GPDs) are calculated. From the GPDs, the electromagnetic form factors, parton distributions as well as structure functions are given. Moreover, the gravitational form factors, the distributions of energy, spin, pressures, and shear forces inside the ρ meson are also explicitly obtained.

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