

## Models for Heavy Baryons Based on the Symmetry between Heavy Quark and Heavy Diquark

*Wednesday 1 November 2023 15:35 (15 minutes)*

Doubly-heavy baryons are similar in dynamics to heavy mesons. To describe the latter, an approximation is used in which the heavy antiquark is considered to be static and the light one determines the dynamics of the meson. In the case of a doubly-heavy baryon, the heavy antiquark is replaced by a static doubly-heavy diquark and the dynamics of the system is again determined only by the light quark. The structures of transition matrix elements from the baryon state to the vacuum for both local and non-local interpolation currents are the same as for the heavy-meson matrix elements. In the talk the formalism of describing the  $B$ -mesons is generalized to the case of doubly-heavy baryons containing both  $c$ - and  $b$ -quarks. Transition matrix elements are considered on the light cone and the models of distribution amplitudes proposed for  $B$ -mesons can be adapted for the doubly-heavy baryons. The exponential model by Grozin and Neubert as well as the linear model by Kawamura et. al. which are dependent on one parameter only - the hadron effective mass - can be easily reformulated for the case of doubly-heavy baryons. The evolution of the baryon distribution amplitudes is also discussed.

**Primary author:** SHUKHTINA, Alisa

**Presenter:** SHUKHTINA, Alisa

**Session Classification:** Theoretical Physics

**Track Classification:** Theoretical Physics